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Amateur Radio

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INSTITUTE OF
AUSTRALIA

For the Experimenter
and Radio Enthusiast

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955 American	10/-		
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EF50	10/-		

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3Q5	10/-	7W7	10/-
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6A3	10/-	12AH7	10/-
6A8	10/-	12C8	10/-
6AC7	10/-	12J5	10/-
6AG5	15/-	12SG7	10/-
6BE6	15/-	12SK7	10/-
6C4	12/6	12SQ7	10/-
6C6	7/6	12SR7	10/-
6C8	10/-	807	10/-
6F5	10/-	809	50/-
6F6	10/-	813	60/-
6F8	10/-	815	50/-
6G6G	10/-	832	50/-
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6J5GT	10/-	956	10/-
6J6	15/-	1603	10/-
6K6	10/-	1626	10/-
6K7G	7/6	1629	10/-
6L7	10/-	2051	10/-
6N7	10/-	7193	5/-
6N8	15/-	9002	10/-
6R7	10/-	9003	10/-
6SH7	5/-	9004	10/-
6SH7GT	4/-	EF50	7/6
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6SN7	10/-		

AR8 Receivers, 11 valves, 6 bands, continuous coverage 150 Kc.—25 Mc., B.F.O., audio controls, calibrat. dials. From £10 to £22/10/-

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AR301 High Freq. Receiver, uses three 954s, one 955, six 6AC7 I.F. stages at 30 Mc. Easily converted to 144 Mc. Complete £6/10/-.

English Beacon Receiver, two valves, contains Trans., Resistors, Pots, Condensers. Ideal for wrecking. To clear ..... 22/6 each

American Com. Receivers R.A.X., 8 valves, 5 bands: 7-10 Mc., 10-13 Mc., 13-17.5 Mc., 17-22.5 Mc., 22-27 Mc. Two R.F. stages. Valves: 12SK7, 12K8, 12SR7, 12A6. Two I.F. stages at 2.2 Mc. Ideal for double conversion. Calibrated vernier dial, AVC/man. control, ant. trimmer, audio gain, etc. Complete with 28 volt genemotor £25

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American I.F.F. Units, complete with Valves, less Genemotor ..... £4/17/6 each

Relays, A.W.A., Aerial Change-over type, 12 volt 27/6

American I.R.C. Precision 1 Megohm W.W. Resistors, WW5 1 watt, accuracy 1%. Few only ..... 10/- each

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Co-ax, indoor type, cotton covered ..... 1/- yd.

Co-ax Connectors, American type ..... 3/- pair

Co-ax Cable, any length ..... 2/- yd.

American Control Box BC1157B, contains one Weston 100 microamp. 2" meter (scale 0-30 Ma. 0-300v.), three Oak wafer switches, sundry toggle switches, Pots. In black crackle 12" x 9" x 3¾" case ..... 50/- each

A.W.A. Artificial Aerial Boxes, contain two 155 pF. variable condensers 2000 v.p., two Oak switches and Resistors, also five high voltage fixed condensers. In grey crackle steel case; height 8½", breadth 9¼", depth 16½"; weight 23 lbs. Few only, to clear 45/-

English Carbon Mike Transformers, new, 5/-

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MSS. and Magazine Correspondence should be forwarded to the Editor, "Amateur Radio," Law Court Chambers, 191 Queen St., Melbourne, C.1, on or before the 8th of each month.

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Wireless Institute of Australia (Victorian Division) Rooms' Phone Number is FJ 6997.

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI: Sundays, 1100 hours EST, 7146 Kc. and 2000 hours EST 50 and 144 Mc. No frequency checks available from VK2WI. Intrastate working frequency, 7129 Kc.

VK3WI: Sundays, 1130 hours EST, simultaneously on 3573 and 7146 Kc., 51.016 and 146.25 Mc. Intrastate working frequency 7133 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI: Sundays, 0900 hours EST, simultaneously on 3560 and 14343 Kc. 3560 Kc. channel is used from 0915 hours to 1015 hours each Sunday for the W.I.A. Country hook-up. No frequency checks available.

VK5WI: Sundays, 1000 hours SAST, on 7146 Kc. Frequency checks are given by VK5MD and VK5WI by arrangements only on the 7 and 14 Mc. bands.

VK6WI: Sundays, 0930 hours WAST, on 7146 Kc. No frequency checks available.

VK7WI: Sundays, at 1000 hours EST, on 7146 Kc. and 146.5 Mc. No frequency checks are available.

AMATEUR RADIO

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EDITORIAL

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"The Limited Amateur Operator's Certificate"

Under Statutory Rules, 1954, No. 50—"Amendments to Wireless Telegraphy Regulations"—appears Sub-Regulation 50A:

"The examination for Amateur Operators Limited Certificate of Proficiency shall be such as to show that a successful candidate possesses the knowledge and qualification specified in this Regulation, namely, (a) A knowledge of Wireless Telephony and electrical principles; and (b) A knowledge of such of the Radio Communication Regulations for the time being in force under the Telecommunications Convention and of such of these Regulations as to relate to the operation of Amateur Stations using Wireless Telephony."

This is the official notice the Wireless Institute has been waiting for over a period of many months since representation was made for the issuance of a **Limited Amateur Operator's Certificate** to assist those technically minded people who, for various reasons, cannot master the morse code, but who have technical knowledge and ability sometimes well beyond the standard necessary for a normal Amateur Operator's Certificate of Proficiency.

Elsewhere in the Regulations under the Wireless Telegraphy Act the **Limited Amateur Operator** is limited to operation in the bands from and including 144 Mc. upwards. This section of the frequency spectrum is so interesting and offers such wide fields for genuine Amateur experimenting that the limitation of the bands that can be used under this license will in no way deter the successful candidate.

The W.I.A. has long been interested and active in implementing **Amateur Emergency Networks** for use during National or Civil emergencies; every State in the Commonwealth is actively participating with these Networks in some form or other.

There is no doubt that the v.h.f. bands will be the universally used bands for future emergency communications networks and the introduction of the limited operators into these regions will ultimately benefit the Amateur Service and the country to a greater degree than is as yet realised.

Today a scant dozen or so have made application for the new license; tomorrow there might be hundreds. The foremost object for which the Institute was formed was "the association of persons and/or bodies corporate or incorporate interested in the encouragement and scientific development of radio communication in all its branches." In pursuit of this, the Limited Operator's Certificate of Proficiency has been gained by Institute representation. The Institute will always pursue its policy of representation for the Australian Amateur.

With the introduction of the **Limited Amateur** it takes unto its fold another responsibility. It welcomes the new license and extends the hand of friendship to all those who gain it.

FEDERAL EXECUTIVE.

THE CONTENTS

THE COMPLETE AMATEUR

BY TOM ATHEY,* A.I.R.E.

SECTION SEVEN

Function and Master Switch Panel

Panel 19" x 3 Units

Chassis: Flat plate at right angles to Panel, 17" x 4" x 16 gauge.

The components on this panel are mounted in such a way as to give balance to the panel. Only three main components are needed, viz.:—

One 2-bank, 3-pole, 3-position wafer switch (Oak).
One 10 amp. D.P.S.T. flush switch.
One 240-110 step-down transformer.

At the rear of the sub-panel is mounted eight follow-through insulators or an 8-point junction box, also one 3-pin recessed plugbase, and five 2-pin chassis sockets. The latter are for the a.c. outlets, viz.:—

240v. to No. 1 Power Pack.
240v. to No. 2 Power Pack.
240v. to V.F.O. Power Pack.
240v. to Splatter Transformer.
110v. to Aerial Relay.

Position 1—C.W.

(1) S1C feeds h.t. to final, shorting out modulation transformer secondary and splatter suppressor S1B.
(2) Removes h.t. from modulator primary S1A.
(3) Removes h.t. from speech amplifier S1E.
(4) Brings aerial relay into transmit S1F.
(5) Feeds h.t. to multipliers S1D.

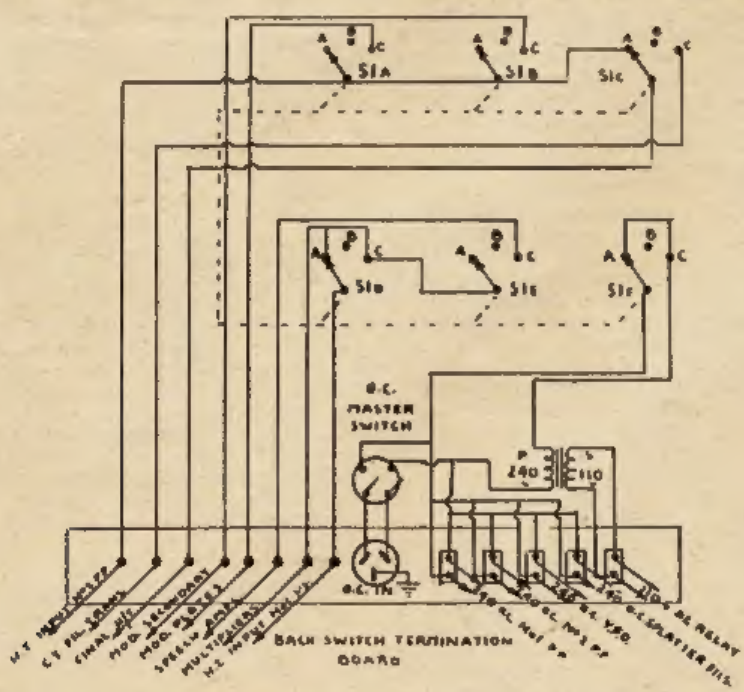
Position 2—Standby

S1A, B, C, D, E, F all opened.

Position 3—Phone

S1A feeds h.t. to modulator plates.
S1B feeds h.t. to modulator secondary.
S1C picks up h.t. from c.t. of splatter transformer.
S1D feeds h.t. to multipliers.
S1E feeds h.t. to speech amplifiers.
S1F feeds 110v. a.c. to relay ready for transmit.

You will see that great care must be exercised in making sure that all wiring is in exact accordance as laid down in the circuitry. Any wires wired on the wrong position would create havoc in the general control.



The recessed chassis plug is for the a.c. 240v. input from the mains.

The other eight connections are for the various circuits obtained by the function switch, the positions of which will be described in detail and can be followed by referring to the diagram. With regards to the switch, I consider this the most important part of the rig. It has three main functions, viz.:

Taking each position separately
Position 1—C.W. only.
Position 2—Standby.
Position 3—Modulator on.

The d.p.s.t. master switch, a flush switch, is the main a.c. control. On switching on the 240v. a.c., it puts all filaments on all chassis and supplies line voltage to the v.f.o. All pilots should light up, indicating that all filaments are on.

It may be better to make the sub-panel a small chassis, 17" x 4" x 1½" deep, thus allowing the chassis sockets to be mounted along the rear edge. Make sure that no a.c. connection has a bare or open connection—remember, "Death Is So Permanent."

The other eight connections can be made up by using a strip of bakelite and mounting screw terminals in a row. Screw type terminals are better than the spring type as they readily provide a means of anchoring spade lugs from the form which is to be made up when the chassis are being wired together, as per the cabling diagram.

In the chassis cabling, keep the a.c. wires to one side of the rack and all other leads carrying r.f. or d.c. on the other. Bind bunches of wiring together using nylex binding strip. It makes for a cleaner and neater job.

SECTION EIGHT

Rack Details

The transmitter is mounted in a relay rack, a diagram of which is shown. The rack can be of only two uprights or can be constructed as a cased-in rack. In the latter instance you will require eight uprights of angle iron. By joining two uprights together as per details, you will allow a recess for the panels to fit into and improve the overall finish of your rig.

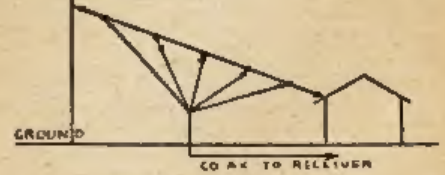
SECTION NINE

Aerial and Feed Lines

A special layout for an aerial or aerials is impossible to advise as so much depends on location, the amount of space available, and your pocket. Beams for 14 and 21 Mc. are great if you can afford them.

I suggest that a two element beam be used for 14 Mc. band, feeding both elements, one out of phase with the other. This type would them cover 14 and 28 Mc. bands. Thus you would only need two beams for three bands. Beams on 7 and 3.5 Mc. are impracticable because of size. Other types, such as folded dipoles, terminated folded dipoles. the latter a reasonably new type, would be the easiest and best for a beginning.

Another type, as yet untried for transmitting but which works excellently for reception, is the impedance switching type, details of which may be found in the latest copy of the "Radiotron Designer's Handbook." This consists of quarter wave lengths of aerial attached to a common point of feed as shown in the diagram.



This aerial automatically selects the desired aerial for the band being used merely by the fact that the impedance of the unwanted bands being such that

* Ex-Instructor Qld. Division W.I.A. Classes; 41 Mountford St., New Farm, Brisbane.

the aerial becomes inoperative. However as I've no data for transmission on it, it is just a matter of taste. Reports on it would be appreciated.

Feed lines can be either open wire lines or co-ax feeders, depending on one's pocket, the latter being rather expensive.

CONCLUSION

The author has endeavoured to keep to standard practices. Nothing of any special system has been used or designed except perhaps the type of final coil.

A word in passing regarding the use of single ended Class C amplifiers instead of push-pull valves is worthy of comment here.

Since the introduction of t.v. in the U.S.A. it has been found that harmonic radiation was causing trouble to the viewers. After exhaustive tests, it was proved that most of the trouble was primarily caused by the use of valves in push-pull. This is an involved theory, but is fully covered in the "Radio Handbook," 12th and 13th editions. It was also found that this spurious radiation could, to a great measure, be solved by using single ended pentodes in place of push-pull tubes, hence my recommendation for one tube in the final.

A further article on the remainder of the station is in the course of being transcribed, consisting of a receiver and control equipment such as frequency meter and modulation monitor, etc., and will be published at an early date.

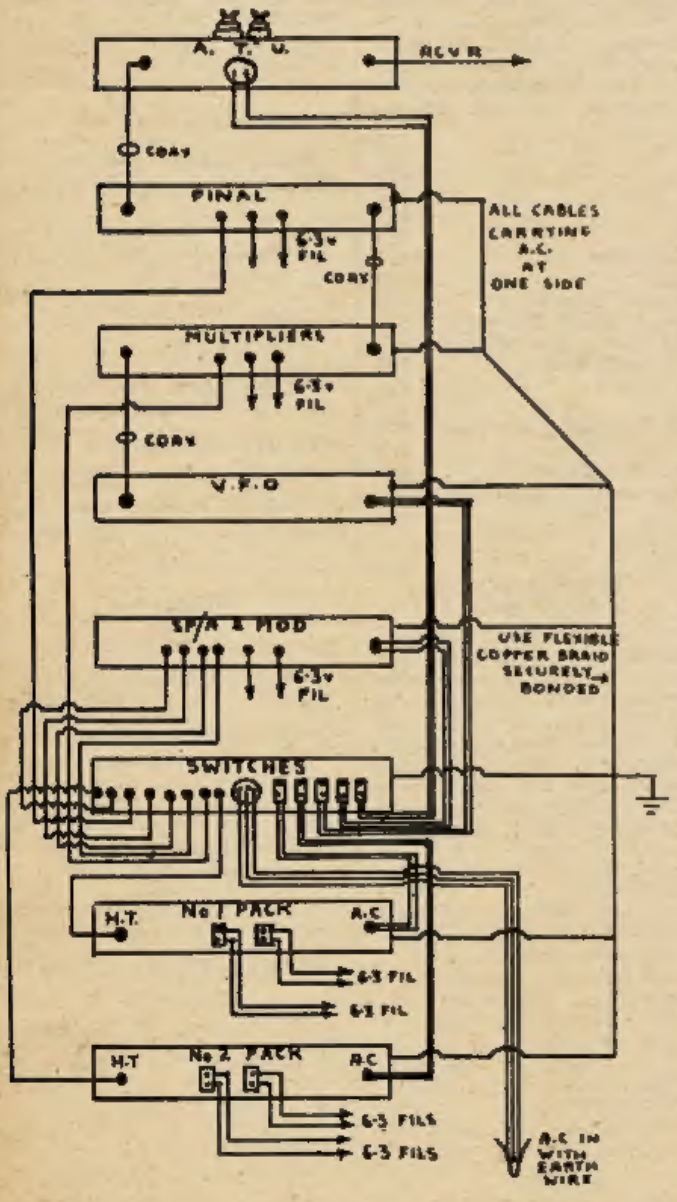
If any intending Amateur can gain a basic knowledge of a clean conventional transmitter, then the author will feel justly rewarded. Good DXing chaps.

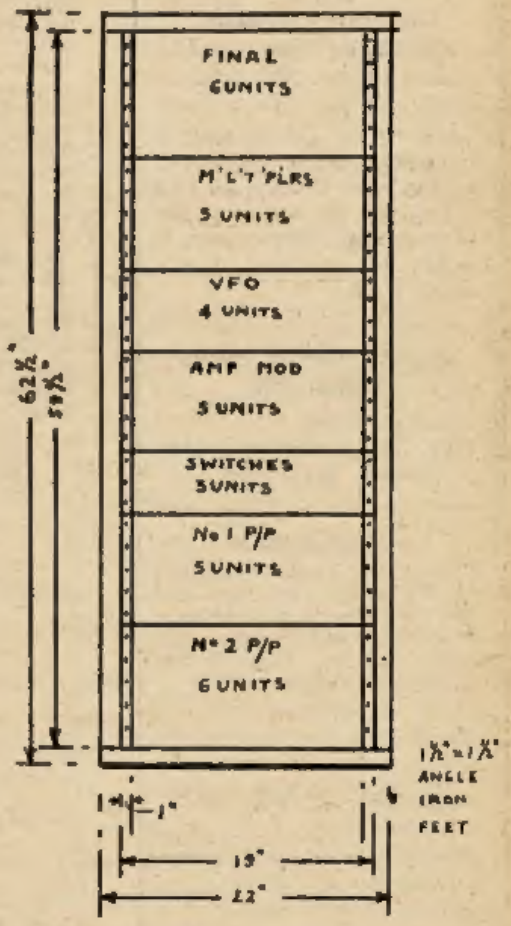
CORRESPONDENTS PLEASE NOTE!

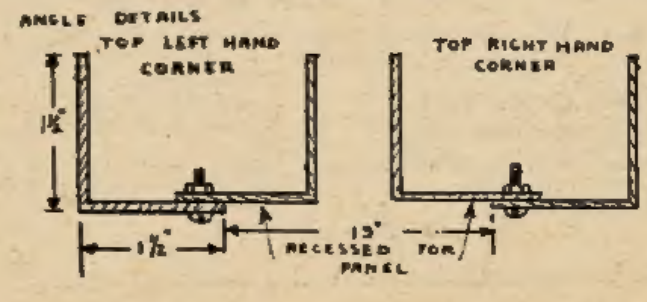
It is the intention of the Magazine Committee to continue to publish the magazine as near as possible to the first of each month. As some correspondents over the last few months are forwarding copy late, they are reminded that **copy date is the 8th of the preceding month.** If you have been sending copy before that date, our thanks go to you; but if your copy has been arriving at 191 Queen Street, Melbourne, after the 8th, here is a warning!

Rather than hold up production of the magazine, in future no responsibility will be taken for non-published notes that arrive after the 8th.

Remember! The 8th is not your posting date, but is the date of copy arriving in Melbourne.







Selectivity and Phone Reception*

Tricks With Your Present Receiver

It doesn't take long for any Ham, new or old, to realise that some receivers can separate signals better than others and that this characteristic is called "selectivity." Different makes and models of receivers vary in their selectivity, of course, but it is questionable if every operator utilises the selectivity of his particular receiver to the fullest extent, and the purpose of this article is to describe how the selectivity can best be used.

However, before getting into these details, let's review the situation and see why we need selectivity and how it is used to separate signals. The selectivity we're talking about is usually obtained in the i.f. amplifier of the receiver—the receiver also has "front-end selectivity" that keeps out "images," but the real hard-working selectivity is in the i.f. amplifier.

A curve of the attenuation versus frequency of an i.f. amplifier is called the "selectivity" or "response" curve of the i.f. amplifier—the circuits in the i.f. amplifier are the most selective in the receiver and so they determine the over-all selectivity of the receiver. The selectivity of a fair communications receiver (without crystal filter) might look as in Fig. 1. The nominal "intermediate frequency" is 455 Kc. (frequency of minimum attenuation). The "bandwidth" at "6 db. down" (6 db. attenuation) is 5.5 Kc., and the bandwidth at 60 db. down is 18 Kc. The bandwidth at any other attenuation up to 70 db. (the apparent limit of measurement in this case) can be read from the curve.

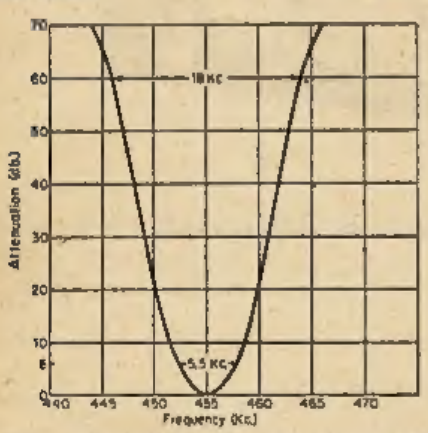


Fig. 1.—Typical i.f. selectivity characteristic of a communications receiver. The bandwidth at "6 db. down" is 5.5 Kc.; the bandwidth at 60 db. down is 18 Kc.

A curve like this means that a signal at 464 or 446 Kc. will have to be 60 db. greater than one at 455 Kc. to give the same output. If it were only 40 db. stronger it would end up in the output 20 db. weaker than the desired signal.

It's to our advantage, therefore, to have an i.f. amplifier in which the attenuation increases rapidly with frequency beyond the 10 or 15 db. point. Amplifiers with this characteristic are said to have good "skirt selectivity," and the ultimate (but unobtainable) curve would be a rectangle. Since "good skirt selectivity" is hardly a quantitative term, some engineers now use the expression "shape factor" to describe the skirt selectivity. The shape factor is the ratio of the bandwidth at some low attenuation (usually 6 db.) to the bandwidth at high attenuation (usually 60 db.). Hence the shape factor in Fig. 1 for the 6 and 60 db. points is $5.5 \div 18 = 0.305$. The selectivity characteristic of an amplifier is defined if the bandwidth at 6 db. down and the shape factor are known. "Bandwidth" by itself isn't of too much use to the Amateur, because two amplifiers could have the same bandwidth (at 6 db. down) and have widely different shape factors. The bandwidth at 6 db. down is primarily of importance in determining the **fidelity** of response to a phone signal, as we will see later.

It's a simple matter to find out what kind of selectivity curve your receiver has, assuming that the S meter reads in decibels to a fair degree of accuracy. (Some of the current receivers are pretty good in this respect). All you have to do is tune through a stable carrier that doesn't quite pin the S meter, with no other signals present. This signal can be a frequency standard, a v.f.o. harmonic or any other unmodulated signal. By plotting the dial frequency against the S meter readings, you will have a selectivity curve of your receiver, accurate within the limits of accuracy of the S meter calibration and the frequency intervals on the tuning dial. You can tune the receiver with the signal source fixed, or you can tune the signal source with the receiver fixed, depending on whether the receiver or the signal source has the better calibration and more favorable tuning rate. If you have a crystal filter you can then cut it in and make a similar run, to obtain the crystal filter selectivity characteristic.

RECEIVING AN A.M. SIGNAL

It's fairly easy to decide the maximum selectivity (minimum bandwidth) you can use in receiving a c.w. signal. Since practically all of the energy of a c.w. signal exists at a single frequency, you might expect that c.w. signals could be received on an i.f. amplifier with a 6 db. bandwidth of only a few cycles. However, this is not the case, since an amplifier **that** sharp would "ring" unmercifully, and also tuning in a signal with such a sharp receiver would be well nigh impossible. From a practical standpoint, the minimum possible bandwidth for c.w. work seems to be in the region of 120 to 150 cycles†.

Deciding upon the maximum useful selectivity for phone reception is not quite as simple. In the first place, an a.m. signal is a complex thing that can have energy existing over 6 to 16 Kc. (Male speech is often given as ranging from 100 to 8000 cycles, but good communication requires an upper limit of only 3000 cycles or less. An upper limit of 3000 cycles requires an a.m. bandwidth of twice this, or 6 Kc.) For purposes of discussion, let's assume a **perfect** male voice a.m. transmitter, with no distortion and the ability to modulate without attenuation at any audio frequency up to 8000 cycles. Then the **possible** spectrum that the signal could occupy would look like Fg. 2, where it is drawn for a carrier frequency of 3900 Kc. How much of this possible spectrum the signal occupies at any instant depends, of course, on the operator's voice (high or low pitched) and the syllables being spoken.

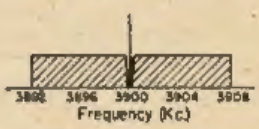


Fig. 2.—The possible spectrum of a "perfect" a.m. transmitter used to transmit a male voice. The actual frequency distribution will vary from instant to instant, depending upon the speech.

FIDELITY

If the receiver is to reproduce the transmitted signal exactly, it must pass the carrier and both sidebands without attenuation. Suppose, for example, that our receiver i.f. has the selectivity characteristic of Fig. 1, and that we tune our receiver to set the signal of Fig. 2 squarely in this i.f. (the S meter will read maximum at this point). Since our i.f. is down 6 db. at 2750 cycles off the mid-frequency, a 2750 cycle component of speech will be attenuated by this amount. A 5000 cycle component of speech will be attenuated 22 db.! In other words, the high audio frequencies of the incoming voice will be attenuated, and the voice might sound slightly "bassy" or lower-pitched to a keen ear familiar with the actual voice. (An unthinking receiving operator might say that "the transmitter has no highs" or that "the audio of the receiver has no highs," when such is not the case—the transmitter is perfect, and the receiver audio system could also be perfect and the effect would still be there.) So it would appear that, for phone reception, we can't even use as much selectivity as shown in the curve of Fig. 1.

Fortunately, such is not the case. In the first place, no sensible Amateur tries to build a "high fidelity" transmitter (except to prove he can do it), and he usually has a high audio frequency response in the rig that drops off rapidly above 3 Kc. If he is smart, he will decrease the low frequency response in the transmitter, so that "highs" are transmitted at greater strength than the "lows," by comparison with his normal speech. Then at the receiving end the "sideband cutting" described in the previous paragraph will be somewhat compensated for and his voice will come out

* Reprinted from "QST," March, 1954.

† Kaye and Kaye, "One db. per Cycle!" "QST," November, 1951.

with more nearly its normal balance (varying with different receivers, however). (Another reason for cutting down the low frequency response is that it makes the modulator's job easier and is more economical of a.f. power.)

Fig. 3.—The possible spectrum of a "practical" a.m. transmitter. The components beyond 3000 cycles are deliberately eliminated, and the lower voice frequencies are attenuated.

HOW MUCH SELECTIVITY?

Now that we have boiled down our "perfect" transmitter to a "practical" one that passes, say only up to 3000 cycles, the possible spectrum will look like Fig. 3. Centred in our i.f. amplifier of Fig. 1, it will suffer only slight attenuation of its high audio frequencies. If we detune it slightly to one side or the other, we can include some more of one sideband and thus improve the "highs." This is an effect you have all noticed when tuning with a fairly sharp receiver. It now becomes apparent that the ultimate to which this process can be carried is with an i.f. bandwidth of just under 3000 cycles, when the receiver could be tuned so that the i.f. was accepting just one sideband. If we don't mind losing some of the "highs" in the original signal, we can use a bandwidth down to around 2000 cycles (there is no general agreement on the figure—some will set it lower and some higher) and still get intelligible speech through. It won't be a faithful reproduction of the original, but it will have a high communications value.

But now we run into a problem. Let's say that we have a sharp i.f. of 2000 cycles bandwidth at 6 db. down and 6500 cycles at 60 db. down. Its curve would look like Fig. 4. (This is the selectivity characteristic of a BC453 "Q5-er.") If we superimpose it on one sideband of the signal in Fig. 3 (as we do in effect when we tune the receiver), we can plot the resultant signal that appears at the detector. This is shown in Fig. 5 for two different tuning conditions. The tuning condition at A passes one sideband without much alteration of its relative amplitudes—the tuning condition at B has cut the "highs" and accentuated the "lows." But look at the poor carrier! In A it has been knocked down better than 20 db., and 10 db. in B. Now the signal appearing at the detector has insufficient carrier, and the net effect is as though we were receiving a badly overmodulated signal†. There will be considerable distortion in the detection process, although the signal can usually be copied.

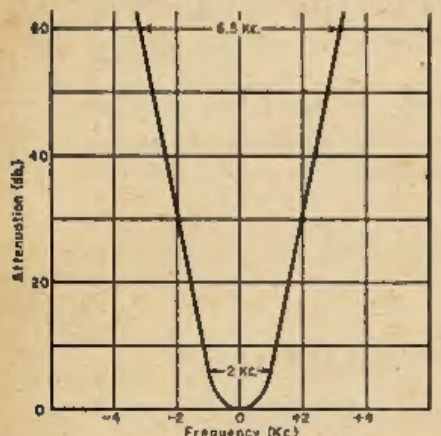


Fig. 4.—The i.f. selectivity characteristic of a typical "sharp" receiver (the BC453 "Q5-er"). Notice that at 60 db. down it has about a third of the bandwidth of the i.f. of Fig. 1.

Here, then, is another limitation to how much selectivity we can use—we can't use it to the point where it takes a good signal and makes it appear at our receiver's detector and audio system as an overmodulated signal. What's the solution? There are several, and they make up the meat of this article.

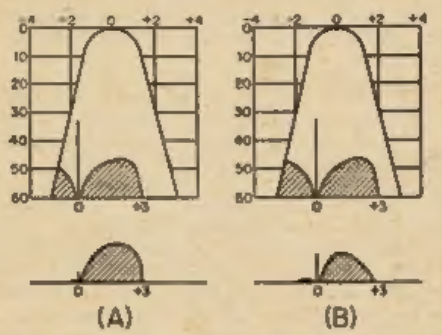


Fig. 5.—The upper sketches show the i.f. characteristic of Fig. 4 (with the vertical scale reduced for convenience) superimposed on the phone signal of Fig. 3. The resultant signals that appear at the detector are shown in the bottom sketches. Notice how the slight difference in tuning has modified the carrier amplitude and the relative amplitudes of "highs" and "lows" in the sideband.

IMPROVED SHAPE FACTOR

Suppose that instead of the selectivity curve of Fig. 4 we could build an i.f. amplifier with a selectivity curve that looked like a rectangle, as in Fig. 6. Then as long as the carrier fell within the passband it would be unattenuated, and we wouldn't have to worry about the overmodulation effects mentioned above. We could utilise up to 3000 cycles of a single sideband (carrier at edge of passband), or 1500 cycles of double sidebands (carrier centred in passband). Furthermore, it wouldn't be too hard to tune, since once the carrier was within the passband, tuning through would only change the relative "highs" in the audio output. In other words, there is a 3 Kc. space on the dial where the carrier can be set and the voice can be heard (although varying in the amount of "highs"), and hence the tuning is not too critical.

But you don't just go down to the corner store and order an i.f. amplifier like that. You wait around wishing for one, and finally someone describes something that **approaches** it, like the crystal-lattice filter§ or the Collins mechanical filter¶. These filters have a big advantage over the characteristic of Fig. 4 in that they have a relatively "flat" bottom and almost vertical sides, so they approach the "ultimate" of Fig. 6. To the extent that their characteristics approach Fig. 6, their performances approach that described in the preceding paragraph. They are certainly superior to an i.f. with the characteristic of Fig. 4.

To reject an interfering signal, you tune the desired signal a little to one side or the other, until the undesired signal drops out of the passband. The carrier of the undesired signal will drop out while one sideband (or a portion of it) remains, but the QRM is not as damaging as when the undesired carrier (and hence a heterodyne with the desired carrier) is present.

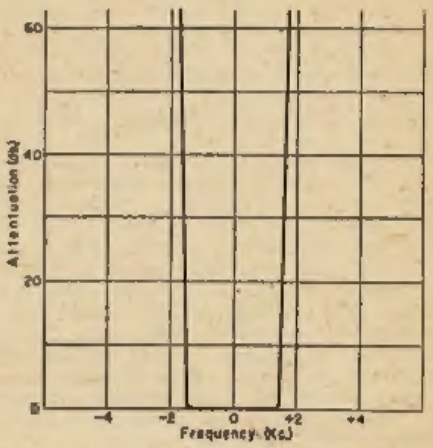


Fig. 6.—An "ultimate" bandpass characteristic for an i.f. amplifier for phone reception. It can be approached with some of the current techniques.

EXALTED CARRIER RECEPTION

But everyone doesn't have a crystal-lattice or a mechanical filter, and the selectivity found in most Ham shacks is perhaps the receiver's crystal filter or some auxiliary selectivity like that shown in Fig. 4. How can you use it to best advantage without attenuating the carrier? One thing you can do is to take a page from the book of the s.s.b. gang, and make up for the lack of carrier at the detector by substituting a locally-generated one.

All this high-falutin' language means is that you turn on the receiver's b.f.o. and zero it to the (weak) incoming carrier. (For example, in the detector signal shown at the bottom of Fig. 5A, the b.f.o. would be set to coincide with the carrier signal, about —1.6 Kc. off the i.f. centre frequency.) The b.f.o. takes the place of the attenuated carrier. If the b.f.o. isn't exactly zero beat (a much more likely condition!) there will be some distortion, something like what is heard when an s.s.b. signal is not properly tuned. (You will get a steady audible beat if you're too far off.) But, as in the reception of an s.s.b. signal, the voice can be understood even though it is not perfectly natural. The extent to which this can be tolerated depends primarily on how anxious you are to hear what the other fellow is saying. But this is a good stunt to have in your bag of tricks—you simply start to make a single-sideband signal out of the incoming a.m. signal by partially lopping off the carrier and one sideband, and then you receive it as you would any other s.s.b. signal. You have to watch the same things: r.f. gain well below the overload point, plenty of

† Technical Topic, "How to Visualise a Phone Signal." "QST," July, 1950.
§ Weaver and Brown, "Crystal Lattice Filters for Transmitting and Receiving." "QST," June and August, 1951.
¶ Roberts, "Mechanical Bandpass Filters for I.F. Ranges," "QST," February, 1953.

audio volume, and b.f.o. set properly in relation to the i.f. passband. Practice it a few times on signals that are "in the clear"—it may take a little while to get the feel of slow tuning and to find the proper setting of the b.f.o. for best audio balance.

One important advantage of this (and any other) exalted carrier reception has not been mentioned yet. At the detector, the audio you hear is the beat between the highest-amplitude signal (normally the carrier) and the side frequencies that make up the sideband. If the carrier amplitude drops down (through selectivity or fading), the audio you hear is a result of the beats between the side frequencies and whatever component has the greatest amplitude. If the drop in carrier amplitude isn't too great, the only obvious effect is a little distortion, but with significant carrier attenuation the distortion can become quite marked and even downright obnoxious. It is to your advantage, therefore, to maintain the carrier at considerable amplitude above the side frequencies at all times. Interfering signals of greater amplitude can also "take over" to cause the carrier frequency (when the resultant beats would be the same, frequencywise). Hence, using the local oscillator to furnish a local carrier, as described previously, give us protection against the distortion obtained when the carrier fades or another carrier attempts to "take over."

Another way that we can obtain the same result, but without using the b.f.o., is to amplify the carrier frequency more than any other. To do this requires a receiver with, in the ideal case, an i.f. characteristic like that shown in Fig. 7A. With this we could set the carrier at 455 Kc. (by proper tuning of the "front end") and the carrier would fall in the "slot" and one sideband would be passed by the shoulder. This is an unrealisable characteristic, however, and we have to settle for a compromise. A crystal filter characteristic can look like Fig. 7B at some setting of the phasing and selectivity controls, and it can be used for exalted carrier reception of an a.m. signal by careful front-end tuning. It is obtained in the **sharpest** position of the selectivity control (contrary to usual crystal filter practice for phone reception, where the filter is set in the broadest "in" position). The tuning will be critical, since the spike of the crystal is quite sharp, but the a.v.c. and S meter can be used for tuning if the receiver is stable.

The audio output will be attenuated considerably, and some receivers may not have enough audio gain for best results, but along with the reduction in audio gain will go a great attenuation of QRM. The receiver is tuned for maximum S meter reading, but it will be much sharper than anything you ever tuned before. Don't wait until you get into a tough spot to learn the technique—try it out on a few "in-the-clear" signals some time until you get the hang of it. It is a good trick to have in your bag. The audio will not be as boomy as it usually is with the crystal filter in the "broad" position.

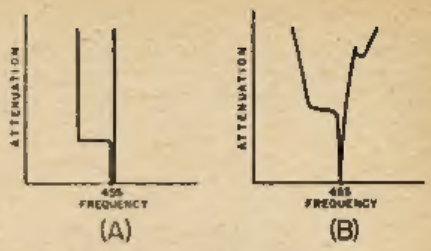


Fig. 7—An "ultimate" exalted-carrier selectable-sideband characteristic, A, can be approached by a setting of the crystal filter that gives the characteristic of B.

In passing, it might be mentioned that there are available "selectable sideband adapters" that add to the effective selectivity of a receiver. The Central Electronics "Sideband Slicer" and the General Electric YRS-1 use a phasing principle** similar to that used in one type of s.s.b. generator, and they both offer exalted carrier reception of incoming signals along with the selectivity feature.

And there you have a brief outline of the problems involved in receiving phone signals in crowded bands, and two simple tricks you can do with your present communications receiver to help solve these problems. Maybe your receiver isn't the best in the world (whose is?), but it's almost dollars to doughnuts that you aren't using it to full advantage. But you can, with just a little practice.

** G.E. "Ham News," Vol. 6, No. 4, July, 1951.

A Transmitter with AC/DC Power Supply

BY HANS J. ALBRECHT,* VK3AHH

So called stand-by transmitters have always been popular among the Ham fraternity. They are useful for quite a number of applications. This is proved by various types of well known disposals equipment. One major requirement in the design of such a transmitter must obviously be the provision of a universal power supply. Although an ideal universal power supply would include possible operation from dry batteries as well as from an arbitrary power connection, the satisfaction of the latter requirement only is a considerable step forward.

Above reasons caused the writer to design a simple transmitter with an AC/DC power supply. Such power supplies are frequently used for various electronic appliances. Thus this description is not intended to produce something entirely new, but has fulfilled its purpose if it serves as a guide to readers who are interested in the construction of equipment on similar lines.

Main features of the rig to be described can be summarised as follows:

- Satisfactory results were obtained on both c.w. and phone.
- Its input power is reasonably adequate (e.g. 10-12 watts with 230 volts mains).
- Although the rig was primarily intended to be a c.w. transmitter, a modulator tube driven by a carbon microphone has been included.
- Operation on more than one band is possible.
- All components can inexpensively be purchased in this country.
- The AC/DC power supply permits economic operation from all kinds of AC or DC mains.

GENERAL DESCRIPTION

The circuit given in Fig. 1 shows a perfectly straight forward transmitter, consisting of v.f.o., doubler, final stage, and modulator. Only the circuit of the power supply differs greatly from the conventional way, i.e. it is transformerless. Thus tubes with high voltage heaters are utilised throughout, their heaters being connected in a series-parallel fashion. The high tension is supplied by a rectifier section containing a selenium rectifier and an appropriate smoothing filter.

There is no need to emphasise how convenient v.f.o. operation is on the Ham bands nowadays. This is particularly the case with low powered rigs, and thus the inclusion of a v.f.o. was considered a necessity. It is of the e.c.o. type with temperature compensation and band-spreading. The tube used is a 12SK7. As a safeguard against possibly extensive voltage fluctuations (mainly due to the fact that a number of stages is supplied by a single h.t. supply with condenser input filter) voltage regulation at its screen-grid by means of a VR105 is used. The circuitry is equivalent to that of the v.f.o. described earlier†. Its frequency range is likewise 3.5 to 3.6 Mc.

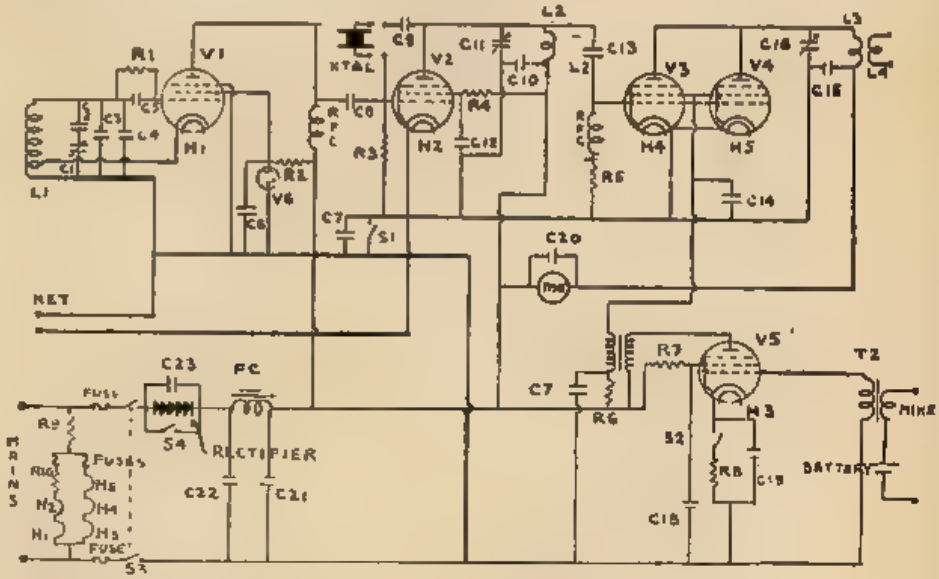
The next stage comprises a 50L6G working as a doubler and its plate tank circuit covers the 7 Mc. band. Operation on the 3.5 Mc. band is possible by letting the stage operate as a buffer, which can be achieved by connecting an appropriate condenser in parallel to the existing circuit and thus changing its coverage to 3.5 Mc. This can be done by a simple switch. Provision is made to utilise this stage as a crystal oscillator if so desired. In that case a crystal can be plugged into the socket being connected between plate and grid of the tube as shown in Fig. 1, thereby forming a Pierce oscillator. The plate circuit is capacitively coupled to the final stage.

This final stage consists of a pair of 50L6Gs in parallel. Automatic negative grid bias is produced by grid current and grid leak resistor. The tank circuit is equipped with a plug-in coil for the band of operation. This stage works as a straight amplifier on 3.5 and 7 Mc. and as a doubling p.a. on 14 Mc. if operation on that band is desired. As shown in the figure, the common earth connections to the buffer and final stages are interrupted by the key, across which the phone/c.w. switch is connected. An appropriate link is wound on the coil former so that output to a 75 ohm line is conveniently obtained. The output coupling can, of course, be altered to suit individual requirements.

The modulator section contains another 50L6G whose audio output is sufficient to modulate the screen-grids. Various kinds of screen modulation are possible. This transmitter uses the ordinary transformer coupled type. Clamp tube or controlled carrier modulation should, however, give equally good results. Readers interested in further experimentation in that direction are referred to an excellent publication in this magazine some time ago‡. The lack of a speech amplifier necessitates the use of a carbon microphone ahead of an appropriate input transformer. It must, however, be mentioned that another 12SK7 could be added to perform as speech amplifier enabling other microphones to be employed. The modulator tube can be disconnected by switch S2.

AC/DC POWER SUPPLY

The mere mention of AC/DC power supplies may cause some readers to raise various more or less violent objections on account of a number of disadvantages, such as transformerless supplies are said to have. However, it should always be remembered that the operation of apparatus using simple supplies of this kind is in no way more difficult or dangerous than that of ordinary equipment provided certain precautionary measures are observed constructing them. The main requirement is that **the chassis and cabinet (if metal) must at no point be in direct connection with the mains**, i.e. the AC/DC powered instrument must comply



C1, C11, C16—100 pF. variable.
C2—40 pF. N.P.O.
C3—100 pF. (cer. TC-750).
C4—250 pF. mica.
C5—100 pF.
C6, C7, C12, C14, C17, C18, C23—0.01 uF.
C8, C9, C20—0.001 uF.
C10, C15—0.05 uF.
C13—500 pF.
C19—25 uF., 6v.
C21—32 uF. 600 volt.
C22—8 uF. 600 volt.
R1—20,000 ohms.
R2—2,500 ohms, 7 watts.
R3, R4—50,000 ohms.
R5—5,000 ohms.
R6, R7—10,000 ohms.
R8—140 ohms.
R9, R10—See text.
L1—5.1 uH.
L2—7.4 uH.
L3, L4—According to band and output coupling desired.
V1—12SK7.
V2, V3, V4, V5—50L6G.
V6—VR105.
R.F.C's.—2.5 mH.
Ma.—Milliamp. meter 0-120 Ma.
T1—Audio transformer 1 : 4.
T2—Input transformer for carbon microphone.
S1, S2, S3, S4—Switches (see text).
F.C.—Filter choke (see text).

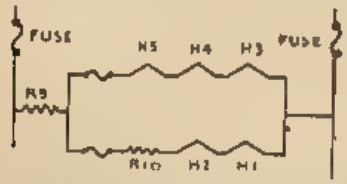
* 10 Belgravia Avenue, Box Hill North.

† H.J.A., "Simple V.F.O. With Temperature Compensation," "A.R.," December, 1952.

‡ G. M. Bowen, "A Mobile Modulator," "A.R.," April, 1953.

with the Radio Code of the Standards Association of Australia (A.S.S. No. C69—1937) which states under V.7 (f) (ii.): **Power units and sets of the transformerless type shall have the live parts of the inner structure isolated from the case or frame by an isolating condenser or other approved means, which shall not be capable of passing a current exceeding 5 milliamperes to case or frame when the full rated voltage is applied in the normal manner of operation.**

This means that an insulated earth bus has to be used as common earth connection. It is advisable to connect this wire to chassis, shields and cabinet by means of condensers having low impedance on frequencies used in the set. A good r.f. connection between the chassis and shields on one hand and the common earth bus on the other hand is, of course, essential for stable operation of the transmitter Thus several condensers are wired in at various points well distributed throughout the rig, so that chassis, shields, and cabinet are **at earth potential for r.f.**! The permissible total impedance of all condensers is indicated by the 5 Ma. limit (see above), giving e.g. 50,000 ohms for 250v. mains and 40,000 ohms for 200v. mains. Only the higher value is of interest here because of the universality of the power supply. The total capacitance must therefore not exceed 0.0637 uF., in practice coming to 0.06 uF. In the writer's rig six 0.01 uF. mica condensers (not shown in Fig. 1) connect chassis and shields to the common earth bus, being well distributed throughout the circuit.



Points emphasised here are, of course, well known facts in the construction of AC/DC receivers as is also mentioned in the "Radiotron Designer's Handbook."¶

Above isolating precautions are obviously not necessary if cases or frames of wood, or other insulating materials, are used as mounting bases, see ref.§

Before discussing the heater supply in this transmitter, we have to make ourselves familiar with its two major requirements: Firstly, the variety of mains voltages the transmitter is supposed to operate with, and secondly, the maximum permissible heater-cathode voltage specified for the tubes used. To obtain universality we have to make provision for the use of 250, 230, and 200 volts mains.

Answering the second question, we find as "peak heater-cathode voltage" 150 volts for the 50L6G and 90 volts for the 12SK7. There are, of course, quite a number of ways of combining all heaters so that the switching arrangement for changing the power connection remains simple, while above points are observed. Fig. 2 illustrates how the problem was solved in this transmitter.

There are two heater circuits, the first consisting of heater H1 (12SK7), H2 (50L6G) and a resistor, R10; and the second of H3, H4, H5 (50L6Gs). The main dropping resistor, R9, is in series with both circuits as shown in the figure. This resistor has a value of 330 ohms with taps at 270 and 170 ohms to provide for operation from 230 and 200 volts mains as well. Its wattage comes to 30 watts. R10 has 600 ohms at 14 watts. If the use of a second 12SK7 (perhaps as speech amplifier, see above) is desired, it is advisable to connect it into this circuit and reduce R10 accordingly. The calculations are simple application of ohm's law, and therefore computations for other heater combinations should not present any difficulties to readers.

It is obvious that all types of mains within the range 150 to 250 volts can be handled by the above set-up, i.e. by changing the taps if necessary.

A well known disadvantage of series heater operation in AC/DC power supplies is that changes in the mains voltage are transferred to the heaters with a slightly larger percentage. The heaters are consequently subject to voltage fluctuations possibly exceeding the normal 10% tolerance. Thus the use of barretters should result in care-free operation while enabling the above heater circuits to be operated at mains voltages between 230 and 250 volts without changing the tappings. For that, a 300 Ma. 80-200 volt type should be used instead of R9, with a 150 Ma. 80-120 volt type being the substitute for R10. After re-arranging the heater supply described above, a wider range of mains voltages could be covered without changing tappings by utilising barretters of the same types.

The order of the tubes in the heater supply is mainly governed by their peak heater-cathode voltages as discussed above. It is, however, advisable to connect the v.f.o. tube to the earth side of one of the heater circuits although the actual order of tubes does not seem to be critical from the operating point of view.

The rectifier section of the power supply contains a selenium rectifier and a smoothing filter which is of the condenser input type. The selenium rectifier with 28 cells and a diameter of 1.75 inches is rated at 300 volts and 300 Ma.,** providing a reasonable safety margin. The filter consists of the input condenser of 8 uF., a filter choke of approximately 10 Hy. at 200 Ma., and an output condenser of 32 uF. The maximum rating of all condensers is 600 volts. The filtering obtained with components as above was found to be completely adequate. The filter condensers can be of the electrolytic type if the following precautions are observed when operating the transmitter from DC mains:

To avoid wrongly polarised DC voltage at the filter condensers, the rectifier has to be left in the circuit until the correct operation of the transmitter proves that the polarity is right. Switch S4 must then be closed so that the rectifier is by-passed, which is necessary as pure DC should not be allowed to pass through a dry rectifier for too long a period. Switch S3 controls the high tension of the transmitter.

It is suggested to connect appropriate fuses into the h.t. circuit as well as the heater circuit.

The transmitter has frequently been used as a stand-by transmitter with excellent results. Its performance was thoroughly tested on the 7 Mc. band and was found to be well comparable with that of other rigs using the same power.

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AMATEUR CALL SIGNS

FOR MONTH OF MAY, 1954

ADDITIONS

VK—

New South Wales

2ND—K. W. Nutt Station: 97 Findlay Road, South Goulburn; Postal: C/o. Station 2GN, Goulburn.
2AJF—J. D. Ferguson, Taylors Arm, via Macksville.
2AYG—P. Gresser, 11 Rawson St., Coledale, 5C.

Victoria

3OP—J. H. Kosseck, 43 Ford St., Newport.
3QZ—J. G. Colley, Princes Highway, Traralgon.
3AIL—I. Lecis, Canteen, Holding Centre, Benalla.
3AMM—R. H. Cunningham, Portable, 384 Glenferrie Rd., Malvern.
3AQB—W. R. Babb, 20 Ovens St., Yarraville, W.13.
3ARJ—J. R. Adams, "Pine Vale," Wangoom.
3AXD—C. C. Burrows, Deschamp Ave., Lilydale.
3AXM—E. J. Mulholland, Station: 101 Bluff Rd., Black Rock; Postal: D.M.I. Army Hdqrs., Melbourne.
3AXR—C. G. Williams, 41 Molden St., East Bentleigh.

Queensland

4IC—M. N. Bussel-Clarke, Willis Island.
4TY—N. R. W. Tyas, Mount Alford, via Boonah.
4XS—L. J. Salter, 66 Haly St., Kingaroy.

South Australia

5KQ—F. T. Park, 107 Osmond Ter., Norwood.

Western Australia

6OR—J. C. Hoar, 1 Hope St., Mosman Park.
6OY—T. H. Mitchell, 10 Kipling St., Narrogin.

Tasmania

7BL—B. E. Lloyd, 344 Sandy Bay Rd., Sandy Bay.

Territories

8VG—H. A. Vinning, Radio Telecom. Centre, Port Moresby.

ALTERATIONS

VK—

New South Wales

2DB—6 Throsley Street, Fairfield.
2KN—"Craigneish," Coopernook Ave., Gymea Bay.
2LN—195c Housing Settlement, Bradfield Park.
2PL—Station: Wickhams Hill, Griffith, Postal: Box 631, Griffith.
2RI—Home Command, R.A.A.F. Hdqrs., Penrith.
2VQ—1 Brisbane Street, Balgowlah.
2WZ—63 Carranya Road, Lane Cove.
2XE—Station 75 Laurel Street, Willoughby; Postal: Flat No. 2, 15 Glenmore Street, Noremburn.
2AAB—Station 33 Flavelle Street, Concord; Postal Light and Power Section, Buildings Branch, G.P.O., Sydney.
2ABQ—34 Griffin Road North Curl Curl.
2AFF—Lot 66, Site 2, Commonwealth Cottages, Dapto.
2AKS—Station 33 Calbina Road, Northbridge; Postal: 53 North George Street, Sydney.
2AMI—142 Seville Street, Fairfield.
2AVT—70 Epping Road, Double Bay.

Victoria

3MH—16 Newhall Avenue, Moonee Ponds.
3AJZ—Station 2 Mile McDonald's Track, Coalville, Postal: P.O. Box 73, Yallourn.
3AWQ—24 Railway Parade, South Jordanville.

Queensland

4DY—18 Wolseley Street, Buranda.
4IG—35 Curtis Street, Toowoomba.
4JA—36 Leina Street, Auchenflower
4NR—Summerville Road, Carina.
4XP—C/o. E. C. B. Jones, "Mah Deen," Millwood, via Millmerran.

South Australia

5NB—Maitlands, S.A.
5NV—Belair Road, Lynton.

Western Australia

6GC—14 Garden Street, Swanbourne.
6RT—School House, Narembeen.

Tasmania

7BR—21 Denison Street, Queenstown.
7LL—Station: 4 Derwentwater Ave., Sandy Bay; Postal: 174 Macquarie Street, Hobart.
7YH—160 Strickland Avenue, Cascade.

¶ "Radiotron Designer's Handbook," Chapter 35, Section 6.

§ H.J.A., "A Simple 80 Metre Station," "A.R.," March, 1950.

** H.J.A., "How To Use Dry Rectifiers," "A.R.," June, 1952.

HETROFIL

BY C. A. CULLINAN,* VK7XW

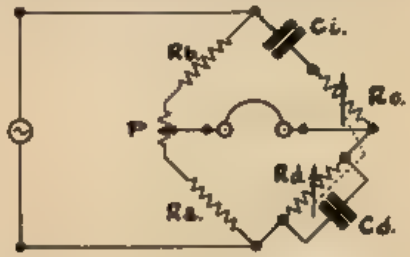
Way back in 1939, R.W. Woodward, W1EAO, described in "QST" an amazingly simple device for removal of troublesome heterodyne interference in communication receivers under the title of "Hetrofil—An Aid To Selectivity."†

So valuable is this gadget as an adjunct to the Amateur Station that we feel that we cannot give it greater praise than to use the name Dr. Woodward coined for it.

Here is a device using only a few resistors and condensers which can eliminate a bad heterodyne just like a crystal filter, but at a fraction of the cost and negligible complexity.

The basic circuit is that of a Wien Bridge, as shown in the diagram. This bridge is an audio frequency bridge which is used extensively in audio work for frequency measurement. When made with precision components it has very high accuracy, the control knob being adjusted for a null, which is quite sharp.

When Dr. Woodward's article appeared we built up one of them and it has seen a lot of use since then. During the war it was used on many occasions to permit reception of B.B.C. news despite a bad heterodyne which used to accompany many B.B.C. news services.



Basic Wien Bridge.

Afterwards it was used in sound effects work in broadcasting work, whilst now it assists our receiver.

For the mathematically minded who want to delve into the mysteries of operation of the Wien Bridge, the following equations give the data necessary to design the bridge for individual requirements. For instance, the GR type 434B audio frequency meter covers the range 20 to 20,000 cycles per second in three steps: 20-200 c.p.s., 200-2,000 c.p.s., and 2,000-20,000 c.p.s.

Unknown frequency f

$$f = \frac{1}{2\pi \sqrt{Rc\ Rd\ Cc\ Cd}}$$

$$\text{when } \frac{Cd}{Cc} = \frac{Rb}{Ra} - \frac{Rc}{Rd}$$

$$\text{However if } Cc = Cd$$

$$\text{and } Rc = Rd$$

$$\text{and} \frac{Rb}{Ra} = 2$$

$$\text{then } f = \frac{1}{2\pi\ Rc\ Cc.}$$

In a well built Hetrofil over the range 100-5,000 c.p.s., the attenuation at the null point will be in the order of 200 c.p.s. 30 db., 500 c.p.s. 40-45 db., 1,000 c.p.s. 45 db., and 2,000 c.p.s. 55 db. In the Hetrofil a switch enables different condensers to be switched into circuit. This is for two reasons. Firstly, the attenuation for a particular frequency will differ with different capacities, and secondly, at some null frequencies the response curve will be more asymetrical with some capacities than with others.

Construction is simple and for Amateur work ordinary ±10% tolerance resistors and condensers may be used. The dual potentiometer should have a logarithmic taper in each section, but it will probably be very difficult to obtain this taper. However, ordinary linear wire wound potentiometers may be used.

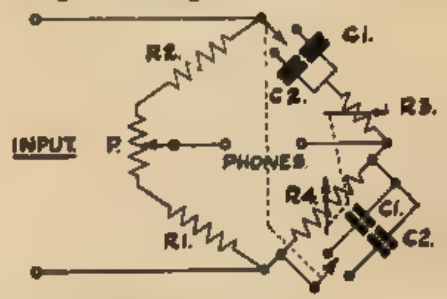
The linear unit used here at VK7XW was manufactured pre-war by A.G.N., of Melbourne. If dual potentiometers are not available, then it is desirable to gang two single units. The method of ganging will depend on the physical construction of the units used. Note from the diagram of the Hetrofil that the pots are used as rheostats and it is possible to have the two slider arms on a common shaft.

The purpose of potentiometer P is to obtain fine balance, but if the components are reasonably accurate, it will not be needed.

In the parts list, R1 and R2 are 1,000 and 2,000 ohms respectively and with these values, the Hetrofil should be used from a high impedance headphone output, say 2,000 to 4,000 ohms.

To use it from a 500 ohm output on a recever, R1 and R2 should be 150 and 300 ohms respectively.

It is very important to realise that the null will be only for a given frequency and if in tuning out a heterodyne or any other tone, there is a considerable harmonic content then this will pass through the bridge.



Practical Wien Bridge.

C1—0.05 uF. condenser.
C2—0.25 uF. condenser.
R1—1,000 ohm 1 watt carbon resistor.
R2—2,000 ohm 1 watt carbon resistor.
R3, R4—10,000 ohm dual potentiometer or rheostat.
P—200 ohm potentiometer.
S—Double pole 2-way wafer switch.

The Hetrofil has an insertion loss of about 15 db., then if the audio gain of the receiver is wound up too much any increase in harmonic distortion becomes noticeable as apparent inability to obtain a null. However, if the resultant is compared to the output to the bridge, it will usually be found that it is the harmonics that can be heard. The ear is a most sensitive device and a very weak harmonic may appear to be much louder than it actually is in practice.

The Wien bridge is frequently used in distortion analyses as the insertion loss one octave each side of the null may be negligible. This bridge is also often used in very low distortion audio oscillators of the negative feedback type.

In practice the Hetrofil is fascinating. If two signals are being heard as, say, 200 and 500 c.p.s., then either one can be suppressed just by adjusting the bridge.

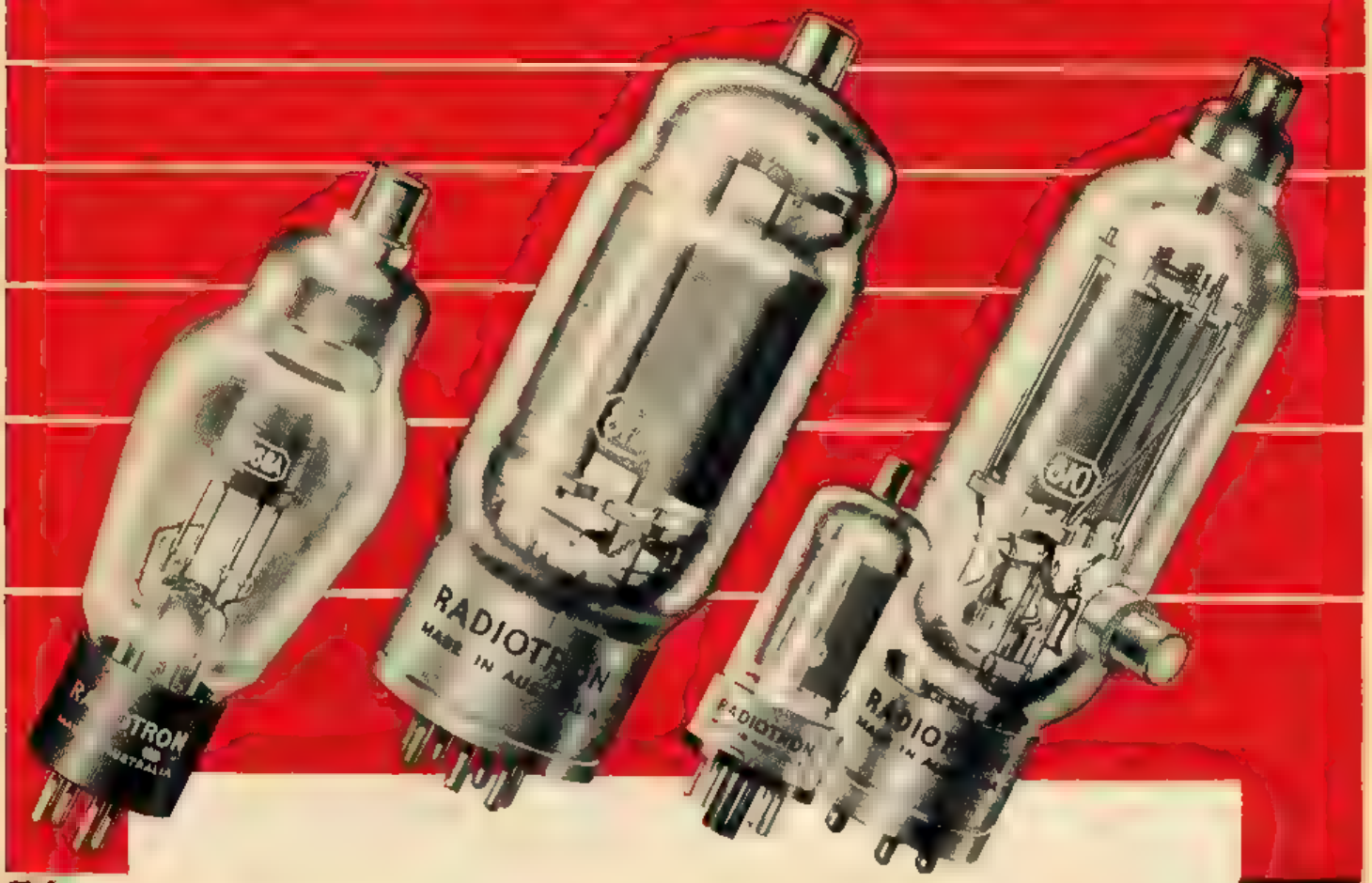
Due to the asymetrical response there is some frequency distortion on phone signals, but this property also makes the device useful in reducing the "hiss" type of noise background.

For the chap who plays around with sound effects, just feed a voice into it, swing the ganged pots. back and forth non-symetrically, inject a judicious background of atmospheric noise recorded from a s.w. receiver and you have synethetic short wave reception that should trick even the experts.

* 64 Lawrence Vale Road, Launceston, Tas.

† "QST," September, 1939.

RADIOTRON POWER VALVES



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EDDYSTONE "750" RECEIVER

FREQUENCY RANGE: Band 1—32 to 12 Mc.; Band 2—12 to 4.5 Mc; Band 3—4.6 to 1.7 Mc.; Band 4—1665 to 480 Kc

VALVE LINE-UP: Eleven valves perform the following functions—

R.F. Amplifier	6BA6	N.L. S Meter Diodes	6AL5/D77
Mixer (S.F. to 1820 Kc.)	ECH42	Output	N78
Oscillator	6AM6/Z77	Beat Freq. Oscillator	6BA6
Fre. changer (to 85 Kc.)	ECH42	Rectifier	5Z4G
I.F. Amplifier	6BA6	Stabiliser	VR150/30
Det., A.G.C. and A.F.	DH77		

ELECTRICAL PERFORMANCE Double Conversion Superheterodyne. Sensitivity is better than 5 microvolts for a 15 db signal/noise ratio at all frequencies.

SELECTIVITY is variable over the range 30 db to 60 db down 5 Kc. off resonance. Image ratio is better than 40 db at 30 Mc. and greater at lower frequencies.

AUTOMATIC GAIN CONTROL Output level is maintained within 15 db for a 90 db change of input, above 3 microvolts at 8 Mc

AUDIO OUTPUT: Maximum output is 3.5 watts. Pick-up terminals are fitted and audio stages give linear amplification over a wide frequency range.

S METER: A socket at the rear accepts the Cat. No. 669 Signal Strength Meter.

FINISH: Fine black ripple.
Weight 40 lbs., width 16¾", depth 10", height 8¾".

Price £128/7/7 (inc. Sales Tax, Speaker extra)

EDDYSTONE "840" RECEIVER

FREQUENCY RANGE Band 1—30.6 to 10.5 Mc., Band 2—10.6 to 3.7 Mc., Band 3—3.8 to 1.4 Mc.; Band 4—205 to 620 Metres.

VALVE LINE-UP.

R.F. Amplifier	UAF42	Output	UL41
Frequency Changer	UCH42	Beat Freq. Oscillator	UAF42
I.F. Amp. and A.G.C.	UAF42	Rectifier	UY41
A.F. Amp. and Det.	UAF42		

ELECTRICAL PERFORMANCE Sensitivity is better than 10 microvolts for a 15 db signal/noise ratio.

SELECTIVITY: 30 db down 10 Kc. off resonance. Image ratio better than 15 db at 30 Mc. and correspondingly higher at lower frequencies.

AUTOMATIC GAIN CONTROL The delayed A.G.C. system maintains the output within 25 db for a change in input of 80 db above 3 microvolts. A.G.C. is switched off when the B.F.O. is turned on.

POWER INPUT Inputs of 100/115 volts and 220/250 volts are catered for, and current consumption is approximately 0.275 amp. The receiver operates equally well from D.C. or A.C. (25/60 cycles) mains.

FINISH Fine black ripple.

Price £103/6/2 (inc. Sales Tax, Speaker extra)

EDDYSTONE '680X' RECEIVER

FREQUENCY RANGES Band 1—30 to 12.3 Mc., Band 2—12.5 to 5.3 Mc., Band 3—5.7 to 2.5 Mc., Band 4—2.5 to 1.11 Mc., Band 5—1120 to 480 Kc

CIRCUIT Fifteen valves perform the following functions—

Two R.F. Amplifiers	6BA6	Push-Pull Output	6AM5/EL91
Frequency Changer	6BE6	Beat Freq. Oscillator	6BA6
Separate Oscillator	6AM6/Z77	Noise Lim., S Meter	6AL5/D77
Two I.F. Amplifiers	6BA6	Rectifier	5Z4G
Detector and A.G.C.	6AL5/D77	Voltage Stabiliser	VR150/30
Two Audio Amplifiers	6BR7		

ELECTRICAL PERFORMANCE Sensitivity for 50 milliwatts, 15 db signal/noise, 4 microvolts or better on all ranges.

SELECTIVITY: Bandwidths at 6 db down—Minimum 14 Kc., first intermediate 7.5 Kc., second intermediate 4 Kc., maximum 2.5 Kc., and greater with crystal switched in and phased.

AUTOMATIC GAIN CONTROL 9 db change of output for 100 db change of input, above 1 microvolt at 9 Mc.

FINISH Polychromatic Grey.

Weight 47 lbs., width 18¾", depth 13¾", height 8¾".

Price £206/18/4 (inc Sales Tax, Speaker extra)

EDDYSTONE "740" RECEIVER

FREQUENCY RANGE: Band 1—30.6 to 10.5 Mc., Band 2—10.6 to 3.7 Mc., Band 3—3.8 to 1.4 Mc.; Band 4—205 to 620 metres.

VALVE LINE-UP:

R.F. Amplifier	EAF42	Beat Freq. Oscillator	EAF42
Frequency Changer	ECH42	Output	EL42
I.F. Amp. and A.G.C.	EAF42	Noise Lim. and S Meter	EB41
A.F. Amp. and Det.	EAF42	Full Wave Rectifier	EZ40

ELECTRICAL PERFORMANCE Sensitivity is better than 10 microvolts throughout for a 15 db signal/noise ratio and 50 milliwatts

SELECTIVITY: 30 db down 10 Kc. off resonance. Image ratio better than 15 db at 30 Mc. and greater at lower frequencies.

AUTOMATIC GAIN CONTROL A change of input of 80 db affects the output by less than 25 db.

S METER. A socket at the rear accepts the Cat. No. 669 S Meter

FINISH Fine black ripple.

Weight 30 lbs., width 18¾", depth 10", height 8¾".

Price £87/3/9 (inc. Sales Tax, Speaker extra)

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REMEMBRANCE DAY CONTEST, 1954

The Remembrance Day Contest is an Australian annual contest to perpetuate the memory of those Australian Amateurs who gave their lives for their country during World War II. It is held on the week-end nearest to the 15th August in each year, the date on which the hostilities ceased in the S.W.P.A.

A Handsome Perpetual Trophy is awarded annually for competition between States, inscribed with the names of those who made the supreme sacrifice, and so perpetuating their memory throughout Amateur Radio in Australia. The name of the winning State each year is also inscribed on the Trophy.

Again this year Amateurs in the VK1 call areas can participate in the Contest. Scoring for contacts with VK1 remain the same, namely, **six points per contact per band for all States for contacts with VK1.**

1. The Contest will commence at 1800 hours E.A.S.T. on 14th August and continue through until 1759 hours on the 15th August.

2. The Contest is open to all Australian Amateurs, but only members of the W.I.A are eligible for the awards.

3. The Contest is an open event—c.w., phone, or a combination of both may be used.

4. The Contest is an Interstate Contest, and Amateurs in each State will endeavour to contact Amateurs in all other States.

5. A station may be operated by more than one operator under the station call sign provided that operators, other than the station licensee, submit a separate log under his own call sign for contest purposes.

6. All existing Amateur bands may be used, and all transmissions must conform with the Regulations as laid down in the P.M.G's. "Handbook for the Guidance of Operators of Amateur Wireless Stations." Any breaches of these will lead to the disqualification of the operator concerned.

7. The arrangements of schedules for contacts on other bands will not be permitted.

8. All stations entering the Contest will call "CQ RD" if using c.w., and "CQ Remembrance Day" if using phone.

9. A State competing for the Trophy must submit a minimum of six (6) logs from financial members before becoming eligible for contesting the Trophy.

10. Only one contact per station per band is permitted.

11. **Serial numbers** to be exchanged during the Contest will be as follows:—

(a) For **c.w.** the first three figures will be the RST (telegraphy) report, followed by the serial number of the contact commencing with any number between 001 and 100 for the first contact and increasing in value by one (1) for each successive contact. If any contestant reaches 999 he will then commence 001 and continue 002, 003, 004, etc.

(b) For **phone** the first two figures will be the RS (telephony) report, followed by the serial number of the contact commencing with any number between 001 and 100 for the first contact and increasing in value by one (1) for each successive contact. If any contestant reaches 999, he will then commence 001 and continue 002, 003, 004, etc.

A complete exchange of serial numbers must take place before any points may be claimed for the contact.

12. In order that an equitable distribution of points for States with a large number of contestants compared with a State with fewer contestants may be determined, a sliding scale of points has been allotted as shown in the scoring table appended.

13. In addition to the points in the scoring table that may be scored by a contestant, a bonus of 25 points may be added to the total score for each State worked on 50 Mc. or above.

14. The log submitted must show in the following order: Date, time, band, emission, call sign, RST/No. sent, RST/No. received, points claimed. No log will be accepted unless laid out in this order

15. A statement signed by the operator must be attached at the conclusion of the log stating that the Regulations (Rule 6) and these Rules have been observed. Any logs departing from this form will automatically be disqualified.

16. All logs must be forwarded **through the Contestant's Divisional Council** (for membership checking) to reach the Federal Contest Committee, Box 1234K, G.P.O., Adelaide, on or before 11th September, 1954.

17. Attractive certificates will be awarded to the first, second and third highest in each State; there will be no outright winner for Australia. Where a large number of logs are received from any one State, further certificates may be awarded at the discretion of the Contest Committee.

18. The State to which the Perpetual Trophy will be awarded shall be determined as follows:—

To the average of the top six (6) logs shall be added a bonus arrived at by multiplying this average by the ratio of valid logs submitted by that State to the total of Amateur Licensees in the Division at the time of the Contest.

Example: Total points equals—

$$\text{Aver. Score} \left\{ 1 \text{ plus } \frac{\text{No. of Logs}}{\text{No. of Licensees in Division}} \right\}$$

19. The logs which will be accepted for the multiplier under Rule 18 shall show at least five (5) contacts in the Contest.

20. The Trophy shall be forwarded to the winning State in its container and will be held by that State for a period of twelve (12) months when the winner for the succeeding year is determined.

21. The Federal Contest Committee shall be the sole adjudicators and their ruling will be binding in the case of any dispute.

SCORING TABLE

From \ To	VK1	VK2	VK3	VK4	VK5	VK6	VK7	VK9
VK1 ..	–	6	6	6	6	6	6	6
VK2 .	6	–	1	2	3	5	4	6
VK3 ..	6	1	–	3	2	5	4	6
VK4 ..	6	1	3	–	3	6	5	4
VK5	6	2	1	3	–	5	4	6
VK6 ..	6	1	2	4	3	–	5	6
VK7 ..	6	2	1	4	3	5	–	6
VK9 ..	6	1	2	3	4	5	6	–

Note.—Read the table from left to right for points for the various States.

Examples:—

VK2 scores 1 point for a VK3 contact.
2 " " " VK4 "
3 " " " VK5 "
VK6 scores 1 " " " VK2 "
2 " " " VK3 "
1 " " " VK4 "

DX ACTIVITY BY VK3AHH†

DX HIGHLIGHTS

There is a possibility that **VQ9N2K** (VQ4NZK) will be active in Aug., 1954.

By the time these notes reach you, **VS5RO** (G2RO) should have been representing **Sarawak** (expedition scheduled for June, 1954) (from 2QL).

Besides, G2RO intends to operate from other rare DX locations in Asia during the next couple of months. Detailed information will be given when available.

BAND CONDITIONS

3.5 Mc.: Break-throughs from North America and the Pacific Islands occurred during May. Signal strengths were reasonable around 0630-1200z.

Chas. 1AC worked a long series of VKs* and ZLs* on c.w. and phone; followed by Frank 2QL who keyed with VR1A*, VK9OK*, ZK1BG* and heard W6, W7. Ray 2ATN managed a QSO with DU7SV*, and Eric BERS105 heard VR2CT. Jim Hunt heard on phone VE3GY (0900z), W6, W7. 2AHH also heard W6 and W7.

7 Mc. The band displayed rather erratic break-throughs to Europe via both short and long route (1900-2230z and 0600-0800z). Short-path North and Central American openings were steady (0600-1400z), while South American conditions were not very consistent. Occasionally, North America broke through over the long path around 2100-2230z. African conditions (around 2100-2200z) were also inconsistent.

Disregarding common W and VE contacts, this is this month's activity:

1AC worked ZK1AB*, and 2QL reports KF3AB*, YV5DE* and CE3QW, KV4UQ, KP4CC. The next in line is Noel 2AHH with KH6*, KG6*, YV5DE*, CO8AI* Laurie 2AMB QSOed JA1CR* KL7FAI*, VR3A*, KW6BB*, 4S7NG*, JA1DV* FA8DA*, and heard XE2LA PX1PR. Bert 2KR spoke to FU8AC*. Ivor 2XB keyed with YV5DE*, followed by Fred 2YS who heard JZ0AA, VS2EF. Bob 2YU contacted CT1DJ*, while Lance 2ZA heard an OQ5 station (2200z). Noel 3ZO reports KP4CC, KP4UH, G8GB, XQ4GX, DL1NW, DL4IQ, PJ2AJ, ZM6AP. 3ATN worked KL7* and Len 3OK spoke to HP3FL*. This month's s.w.l. reports are: BERS 196: KG6FAA, VE3PK and Europeans. Norman Clarke ZM6AR, KG6, W8. Jim Hunt HP3FL, W8, KH6. JAs. 2AHH's log shows DJ1WN* (1550z) JZ0AA*, ZK1AC* and KP4CC.

14 Mc. Conditions on this band were comparatively stable during the month. European contacts were possible over both the short and the long way, the times being 0300-0700z, 1200-1800z (interrupted by frequent QSB), and 2130-2330. Consistent openings to North and Central America existed between 2000 and 0700z. Africa was represented around 0300-0700z. South America broke through around 0300-0500z and 2000-2200z.

Again, regarding contacts with our friends in North America as commonplace, we have, on c.w.—

1AC (Macquarie Island) with VR2BZ*, LA8RB*, SM3AKM*, JAs*, VS6CR*, SM3AKW*, SM3BPU*, followed by George 1DY (Heard Island) who worked a long series of ZSs*, ZE*, CM8AA*, VK1EG*, W8*. Bert 1IC reports ZS1H*, XE*, OZ*, Pete 2PA contacted YV1CB*, F*, DL DJ* G* VS1ER* PA* ON* SM* 2QL worked KM6* VK1DY* VK1PG* ZS2BC*, ZS6AJC* ZS5DE* ZS1H* ZE3JO* FI8AQ* and heard KJ6AZ XE1BA YV5AO. Noel 2AHH QSOed XE1AX*, and XE1SA* Jack 3JJ contacted XE1MJ* while Ken 3KR continues the flow of good ones with HH2FL*, 11LI* VR3A*, DU7SV* VS6CG*, KV4* FO8AJ MM*, KL7FAG*, 11BCL*, FT5HP* PJ2AJ*, EA3AF*, ZS6AIP*, MP4QAH* VS2DW*, XE1AX*, FI8AT* Don 2PV/3APV greatly assisted by sending very comprehensive reports including a long series of Gs, JAs, PA, EI VS3AM, YI3PH YU1AD GM VS1FZ OH, DL/DJ, VR3A ON LA GW TF3AB, 4X4FW, ZB1BM, 3XB worked DL* VR3A* KZ5* G* 3YS reports FA3BG* VE3CG* XE1SA* KL7BAK* Don 3ADI listed DL* G* JA* YU* VS2DW*, followed by Bob 3RW with PJ2AJ* KZ5GH*, KP4UE* FM7WN* T12WR* KL7PI*, XE1MJ*, VR3A* Alan 3SS logged T12WR* DL/DJ*, HB* J* OH* VS1GG* VK1HM* KJ6AZ*, VS6CR* XE1MJ* SM* KL7* CE*, HS1D*, VR3A* FI8AQ* VS2DW* KV4* FO8AC*, ZS8MP* ZS2* CT1DJ*, HH2FL*, and 4X4, GI, GM, PA ON John 3HI QSOed ZS6AJC*, KZ5CP* ZS5AM* ON*, DL*, XE1SA*, FI8AZ*, VP4BN* VU2KV* GW*, PA*, KP4TF*, and Ray 3RK contacted VK1HM* and JAs* BERS 196 heard DU1CV VR3A ZS5MP, CT, CN8MI, FA3BG, VQ4EG, JZ0KF.

The phone portion of the band demonstrated its condition as follows: 2PA reports DL*, DJ*, J*, ZS5DE* VS2DS* VP8BN* while Noel 2AHH logged HK1BZ* YV1AA* HP1JF* VS1* VS2*, VS6* TI3RS*, HZ1AB* ZB1BU* CO2BL*, CO2BK* ZS5DE* YV5AP* CM8AA* XE1TR*, HR1FV* YS1MS* KG4AU* XE1FT* CO2IB*, PJ2CE* HR1LW*, VP8BN* VK1PG* 2AMB heard FM7WN 3RK spoke to KL7AFD*, YV5BY* Don 2PV/3APV heard 4S7WA KA, SM DL KA0IJ OZ AB1US, OH, G, ZX2KN, VU3RA HC1LW FO8AB OA4M HP1RA HK1, ZS5DE, HP3FL. Don 3ADI spoke to ZC5VR*, DU1CV* Dave 3ADW QSOed VK1PG* Len 3ALD heard CM8AA CO2BL, CO2BY ZS5QV, ZS6OY and Ray 3ATN reports VK1PG* CO*, ZS* 3RW spoke to FM7WN*, HR1FV*, HC1LW* VR3C* HK4DF* KJ6AZ* 3NF phoned with YV1AA* HC1LW* HR1BG* ZS6OV*, ZS6OY*, VQ2FU*, KL7BLK* This month's only representative from Tasmania is Pat 7PM who QSOed VS6CW* SM* CM8AA* CO2IB*, ZE1JX* CO2BK* KL7AUG* EA4DT* Qs*. Len 3OK worked KZ5CP*, FO8AB* TI3TG*, TI2RC*, CM8AA* OD5AB* ZS6DW* Here are the s.w.l. reports BERS195 TI3RS. Norman Clarke HR1BG Jim Hunt KJ6, VR3, VR2, OD5, XL7, OH, CO, YS1, ET2, AB1, ZS, VS6, XE1, YV, VS2, VK1DY, PA, DL, LU1QG, YV5, GD3.

21 Mc. Conditions on this band were again rather erratic. The American continents broke through between 2300 and 0400z. The beginning of the month gave African openings around 0400-0700z.

Percy 2PA reports VQ4EH* ZE2KP* VS1FF*, W8* W3UKY/MM*, HP1FL*, DU7SV*, JA* 2PV/3APV heard VR2CG KH6AWQ KX6AR, a long series of W8, AD4BS (QTH ?*) JA1CJ, 3ATN worked KH6* KG6*, OQ5RU*, ZS*, W8*, ZE* Pat 7PM tried his vee beam on this band with YI3WH*, VS2UW* VS1FF*, ZM8AQ*, KG*, KA*, KH6* Norman Clarke heard W8 and KH6. Jim Hunt reports 4S7YL, VS1, HP1FL, DU, YI3WH ZB1KQ, ZE2KP TI2EV, W3UKY/MM W4JGZ MM. W4VUU/MM and W8 in all districts except W1, W9.

27 and 28 Mc. As was to be expected, conditions on this band deteriorated considerably, and the only report received does confirm it. It has to be emphasised that Hams operating and listening for DX on this band during the present period of minimum sunspot activity deserve great praise from everybody concerned with work on short-wave propagation. Good work, chaps! Norm 2ALJ heard one W8.

GENERAL NEWS

Reports mention that Bill **VK1EG** is quite active on the Ham bands and has worked ZS, VK6 and others (from 1DY, 3PV). It looks as if U.S. MM stations have obtained their permit to operate on the 21 Mc. band (from 2ALJ, 3PA, Jim Hunt). **YV5DE** looks for VKs on 3825 Kc. at 0900z. **ZM6AS** is another rare 3.5 Mc. station. VK9DS is ex VK1F (from BERS 196). In the course of his duties, Bud 2AQJ saw KG6 Hams and KA6IJ on Iwo Jima.

For the benefit of our many readers, both in VK and overseas, here is an up-to-date summary of this year's VK1 activity:

Mawson, Antarctica: VK1EG
Heard Island VK1DY, VK1PG
Macquarie Island VK1AC, VK1DJ
Cocos Island VK1BJ, VK1HM

Undoubtedly, we are all aware of the situation on our exclusive 7 Mc. band (7000-7100 Kc.). It is obvious that all we can do is, firstly, increasing our activity during evening hours, and, secondly, providing the authorities concerned with a comprehensive and accurate list of all audible non-Ham stations in that range, so that they will have a basis for steps they find appropriate! Thus we shall again publish, what can be considered, the beginning of such a list as it appeared in last month's notes:

Radio Pakistan, 7008 Kc.
B.C. Station, unidentified, 7032 Kc.
B.C. Station, unidentified, 7055 Kc.

I should appreciate any reports, comprising the type of emission, operating frequency, time, together with its identification as accurate as possible!

QTHs OF INTEREST

KF3AB—M/Sgt. Lloyd Hull, 1963 AACS, Sqdn., APO 2223 T/3 C/o. P.M., N.Y.
TI2WR—Box 1345, San Jose, Costa Rica.
FU8AC—V. M. Fonsagrive, Port-Vila, New Hebrides.
JY1US—Jim Davis, C/o. American Embassy, 'Amman, Jordan.
KR6AA—Col. Fred B. Westervelt, Surgeon, RYCOM, APO 331, C/o. P.M., San Francisco.

Rare QSLs received by 2PA: YV1CB, 2AMB: LU1WE, VK9OK 3KR: TA3AA, PY2AHS, YK1AH, 2PV/3APV FB8ZZ ZE3JR, 3ADW: VR3C, KC6KU, 3ALD: ZM6AP, 3ATN: VP2KB, CR6AJ, CR7AO, ZS3P, AB1US, ZE3JJ, EA9DE, 5RK: 4S7XG, ZC4IP CR3AF, VS2EB, 7PM: TI3LA, KT1WX, DU1CV, ZC6VR, ZS5CZ, VU3RC, BERS198: ZB1BK, ZS5MP, 4S7LB, ZS6EU, 3AHH OA4ED, JZ0KF, VK9OK, SM6ARG.

This time I say thank you to VKs 1AC, 1DY, 1IC, 2PA, 2QL, 2AHH, 2ALJ, 2AMB, 2AQJ, 3HE, 3JJ, 3KR, 3PA, 3PV/3APV, 3XB, 3YS, 3YU 3ZA 3ZO, 3ADI, 3ADW 3ALD, 3ATN, 4RW, 4SS, 5HI, 5RK, 7PM, 9OK, and s.w.l's. BERS196 (VK3), Norman Clarke (VK3), and Jim Hunt (VK3).

— · · · —

QSO USING TRANSISTOR

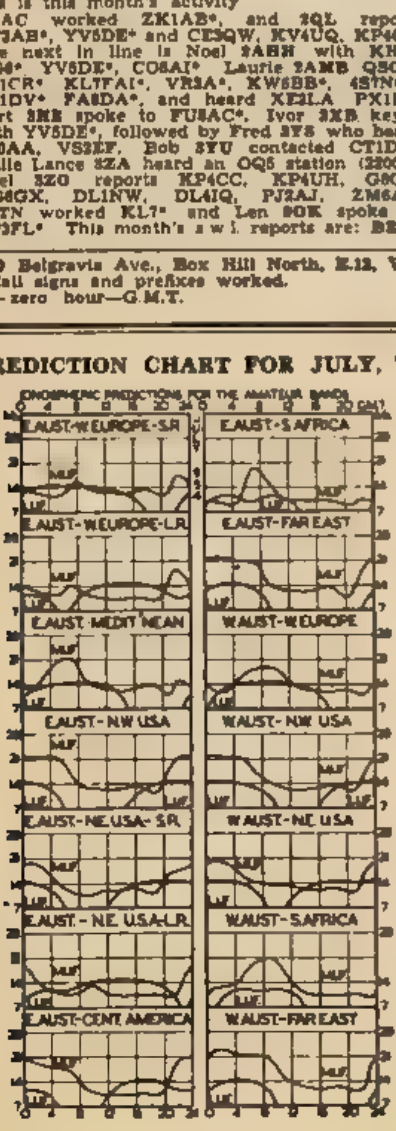
As you are probably aware, several G land lads have been experimenting with transistors in transmitters, and have worked up to 90 miles on 3.5 Mc. and about nine miles on 1.8 Mc.

The following interesting information is to hand from the Editor of "Break-In," R. S. Pottinger, ZL4GP.

ZL4GP has several of the transistors current in Great Britain, and on 22nd May contacted ZL4GA, a distance of three miles. This was followed by contact with ZL3FM in Christchurch, 200 miles, who reported 339. Stations in Wellington (380 miles), Fielding (450 miles), and Whangarei (720 miles) reported the signals heard. There is no doubt that these distant stations heard the transmission as the system was code, and they reported it in some way that was identifiable. One station (Wellington), placed his carrier on the transistor frequency as a check.

The circuit was a self excited v.f.o. using an OC50 transistor, with 125 milliwatts input to the collector, and at roughly 33% efficiency, the carrier was probably of the order of 40 m.w.! The writer thinks that this is a world record for distance using a transistor transmitter, and is better than any G land records. [Unfortunately, no details are to hand as to what band these contacts were on.—Ed.]

PREDICTION CHART FOR JULY, '54



† 10 Belgravia Ave., Box Hill North, E.12, Vic.
* Call signs and prefixes worked.
z — zero hour—G.M.T.

FIFTY MEGACYCLES AND ABOVE

NEW SOUTH WALES

Interest of the V.h.f. Group varied during May between the election of officers for the forthcoming year, a lecture on Noise Generators, the Autumn Field Day, and experiments in various shacks with n.b.f.m. and phase modulation systems.

The election of officers took place at the May meeting and was, as usual, a very democratic affair, due possibly to several declining nominations. As a result, the following appointments were made: President, Perce Healy, 2APQ, Vice-President, Bob Winch, 2OA; Secretary, John Miller, 2ANF; Management Committee members: Horrie Lapthorne, 2HL (Asst. Sec.); Harry Solomon, 2AJZ; Roy Hart, 2HO.

The lecture given by John 2ANF on Noise Generators and their use in adjusting v.h.f. rx's was very well presented. By the aid of graphs and circuits, John explained the various sources of noise which have a bearing on how well the rx will perform when it comes to reception of weak signals, pointing out that many a signal is not heard because of the noise generated in the rx itself, as from information available on noise from external sources, 144 Mc. is the optimum frequency for weak signal reception.

By the use of a simple noise generator, using a A1468 tube, adjustments to circuit, layout and experiments with components can be made to enable the lowest noise figure to be obtained —a very important factor to be considered.

The Autumn Field Day was held under excellent weather conditions on Sunday, 16th May. Stations operating in the field were 2OA at Mt. Gibraltar, 2ANF at Razor Back Mountain, 2YR at Menai, 2AZO, 2YM and 2LG at different points in the Blue Mts., 2HL out from Wyong. Country stations operating included 2GU, 2PM at Canberra, 2WH, 2JW in the West, 2BZ, 2VU, 2KF, 2ANU in the Hunter district, with 2RU at Gosford and 2GA at Ettalong.

Several long-haul contacts were made. 2OA and 2ANF worked 2WH in Forbes and 2BZ in Newcastle. 2ANF worked 2GU and 2PM in Canberra. As it was a point per mile contest, results will be given next month. It was an excellent day, all who took part had a good time.

Interest in n.b.f.m. and phase modulation is intense. John 2ANF has been experimenting with a number of different methods, using a crystal diode with very good results. Ernie 2ASE has been keeping track of John's activities and reports that the number of f.m'ers. are increasing, they include 2WH, 2OA, 2QZ, 2LG, 2ABZ, 2ARM, 2HL with 2AJZ and 2APQ in the offering. Bob 2OA only took ¾ hour to instal his diode modulator.

So if you want to hear some very interesting and informative discussion, listen on 2 mx even into the small hours of the morning. The fact that f.m. or phase modulation has advantages over a.m. for long distant 144 Mc. contacts, where signals were weak, has been the experience of John 2ANF and Hugo 2WH during their nightly skeds.

Signals from 2WH in Forbes have been good during the month. On the 14th May, Hugo worked 2ANF, 2NP, 2ATO and 2HE, he also heard and was copied by 2ABZ, 2HL and 2APQ. It has also been reported that Hugo heard Dave 2BZ in Newcastle. Ben 2RK has been staying with 2WH and has helped with the construction of a 32 el. beam. Talking of beams, Harry 2AJZ has acquired a tower and a tower-raising party consisting of 2MQ, 2HO, 2HL, 2OA, 2LG 2ABU, 2YC, 2AC, 2AJA and 2APQ, with the aid of a semi-trailer and driver, transported the tower 15 miles and re-erected it at Harry's QTH. A very nice addition to the station. Ted 2XX is still wearing out hacksaw blades, cutting angle iron for his tower.

A hint from Colin 2ACK on the use of the 2E26 on 2 mx. Neutralise this tube in the screen by use of a small variable condenser between screen and cathode. Use r.f. chokes in plate h.t. and do not use screen modulation. Colin is using a 2E26 in the final, modulating with a pair of 2E26s and has a very good sig. Also uses series tuned inductively coupled drive to the final with 1½ to 2 Ma. drive. These few hints may be of interest to those who may have had 2E26 troubles.

Little activity has been reported on 50 Mc. Major 2RU, Arch 2GA and Jack 2JH have been heard. However, the 144 and 50 Mc. Scramble in June should arouse some activity.

For the benefit of country and Interstate operators, here are a few of the Sydney stations' frequencies and are on most nights: 2ATO 144.18, 2LG 144.6, 2HL 144.85, 2ANF 144.25, 2NP 144.68, 2APQ 145, 2AJZ 144.5, 2OA 144.7, 2HE 145.8 Mc. More will be listed next month. Also remember if you are home on week days, during the daylight hours, call and listen on the hour when possibly some shift worker skeds can be arranged.—2APQ.

VICTORIA

The main activity in VK3 during the past month has been the enormous activity of the 2 mx group in the country and western districts of the State. Already 3ATN, at Birchip (183 miles from Melbourne), has put signals through to Melbourne consistently and at excellent strength. 3AGD, at Dunkeld (160 miles) has heard a number of Melbourne stations and hopes to have a high power tx on the band shortly. 3ANQ, at Warrnambool, completely disorganised the band one evening by landing an S8 to S9 signal into Melbourne and frantic calling took place by the Melbourne stations to make contact during the hour or so that his signals came through. 3AGV, at Colac; 3CI, at Nagambie; 3DI, at Leongatha; 3BW, at Portarlington; 3AKR, at Westmere, together with 3ZL, 3GM and 3SE at Ballarat complete a very comprehensive list for the metropolitan stations.

The last fox hunt brought out eight mobiles on a particularly cold night and unfortunately for the fox hunt it happened to start at precisely the same time as 3ANQ's signals burst on Melbourne in such fine style; consequently, the home stations concentrated on his signal and the mobiles were left without information for the first hour. However, after the DX faded on the band, the hunt got under way and the only catch of the evening was made by 3VZ. At the last location in Boroondara Recreation Reserve, Kew, 3JD, 3ABA, 3ADU and 3ALY were all within a few hundred yards of the fox car at the finish.

The C.D.E.N. activities are continuing and a hunt is to be held on the second Wednesday in each month, commencing at 8 p.m.

The last v.h.f. meeting was a particularly interesting one with a visit to Overseas Telecommunications Commission and a very interesting night was spent, particularly in the fascimile equipment room. The main interest from the Ham point of view in the Telecommunications room was the fact that many operators are not able to send their own name via the hand morse key and all communications are completely automatic, performed by perforated tape machines for transmission and reception. The phone men, particularly, enjoyed this anomaly with modern communications, to find the professional c.w. man without even the knowledge of the morse code.—3LN.

SOUTH AUSTRALIA

Well, well, well! In fact a whole artesian bore, my best bet for 28 Mc. has made his first post-war contact on 40 mx, and woe is me, has played into the hands of my partly confrere who is no doubt writing with fiendish glee at having won a convert. I can only presume Howard that you are going to win the R.D. Contest for VK5? I hope that you won't quit my sinking ship Rex!

Now if I turn that call sign around, Les 5AX, at Gawler, is consistent on 6 and 2 mx—Sundays, Mondays, Wednesday, chaps. My faith is restored. My good scribes at the Mount and Remark report that activity above 50 Mc. is not at an all time low tide. Claude 5CH is using a modified 522 tx on 144 Mc. and putting out a very good signal—vertical polarisation is used for local working. Col 5CJ also using the 522 with Tom 5TW doing useful service with a modulated osc. Everyone hoping that the Limited License may bring some more enthusiasts onto the bands. That goes for me too Col. Many thinks, may your beam not be allergic to DX!

From the land of sunshine and connoisseurs comes, "Beware the 6J6"—OK Tom, I'll keep away from that two cathode shooter and report the doings. Activity has reached an all time low. Lower than at any time since Xmas, so far as 144 Mc. is concerned. Even Les 5AX and 3AJU cannot hear Tom, but maybe can borrow a converter from 3TI for further attempts. The 7 and 3.5 Mc. bands not being very co-operative either! Tom soon to use smoke signals—news flash 5PS—but Hughie's 16 el. beam is bound to rotate any time now. All mine does these days is to provide refuge for the birds.

From Joe 5JO I learnt that 4XN in Dalby was heard by Bill 5HD transmitting on 50 Mc. and receiving on the 3.5 Mc. band, 1930 hours on Sunday, 16th May, which salient fact should remind DX'ers that in the Southern Hemisphere the winter months still bring their share of Sporadic E, as the earth's inclination favours us. Have a listen, too, on 27 Mc. for the Adelaide University tx. Its activity indicates the presence of meteors passing through the rarefied atmosphere at about a height of 60 miles at great speed and leaving behind a cloud of ionised air. This provides an excellent reflecting medium of fairly short duration, but could be useful even at that. For Interstaters this signal can take the place of the 28 Mc. beacons as it operates fairly consistently. July and August are the two peak months according to Professor Huxley —3XU.

WESTERN AUSTRALIA

No chaps, the Editor hasn't slipped up, and let an error creep in, that is VK6 at the head of this column. About time too, some may say! Anyway I hope to bring forward any v.h.f. items of interest and show the other Divisions that W.A. is not entirely a land of 6 mx modulated osc and diode rx's. So much for that.

50 Mc.—Since the last notes appeared, there have been a few additions to the 50 Mc. ranks. 6WJ, of Mt. Hawthorn (a scant 400 yds. east of 6HK), is now quite active and punishes a 4-el. beam very effectively with a pair of 35Ts. 6CC, of Manning Park, has an 813 going with Clamp tube modulation, Frank has been licensed for some time, but only came on the air around Xmas and duly polished off his share of the DX. 6SJ, of Midland Junction, is another who took the air around the end of December, but unfortunately missed out on the Interstate openings. I believe 2WH was sitting tearing his hair, listening to Sid at 87 about 15 minutes before the end of the Ross Hull Test. He wasn't the only one to tear his hair when Sid later found out about it!

Activity has of course fallen away on 6 mx since the end of the DX season, although it is beginning to look up again now, and there are still the die-hards who manage to keep the flag flying.

Perhaps the v.h.f. gang had better ask the Editor to insert a "Wanted" advert. for one only VK6 country station to take up the v.h.f.s in earnest! Still, it does make for more interest to have that distant station to check with on 50 Mc. and higher. At the moment, the DX is provided by 6GU, in South Fremantle, who is always S9 anyway! John is very pleased with his new 4-el. array at 48 ft., and has good reason to be for his 25 watts radiate a good sig.

144 Mc. The Sunday evening net still forgathers at 2000 hours, although attendances have fallen away of late. 6AG, 6KW, 6RU, 6WT, 6BO and 6HK have shown up at different times. Still, it's a far cry from the days when up to seven or eight would appear in one evening. This brings to mind such calls as 6OR, 6JS, 6DF, 6RO and 6LW to mention a few. When 6JT is not on his official travels for D.C.A., he puts in an appearance and pours a relentless signal over the metropolitan area from Boya. The lack of a country contact is felt here too, although the last time 6DW put in an appearance signals were up to RST 579 with phone possible at times over this 120-mile path.

About the biggest piece of news to affect 2 mx lately is of course the release of the new Limited A.O.C.P., eliminating the morse test, but permitting operation on 144 Mc. and higher. There are quite a few chaps in this Division who will benefit by this new ruling and it will be interesting to see how it affects the population of the v.h.f.'s, 2 mx in particular. Increased population can only lead to more consistent DX results and then, who knows, someone may raise a W.A.S. on 144 Mc.!

220 Mc.—There was a burst of activity here at one stage recently when a local net of transceivers was proposed, but the idea was shelved when difficulties were encountered with the gear—and when one of the proposed net members took unto himself a wife! All the best to you Tony from the v.h.f. gang—even if you wouldn't come on 6 mx! 6BO and 6GB have put crystal controlled transmissions on the band and have been copied at S8 at 6HK's converter. Rolo is using an 832 tripling, driving another 832 in the p.a. with about 7 or 8 watts output, and Jack has a converted 522 tripling in the final, which works out very nicely. The converter is a 6J6 push-push mixer, 6SH7-RL7-6J6 osc. chain from 7.750 Mc., with the final 6J6 tripling to 279 Mc. 6WJ has had considerable success with a pair of 7193s as far as 6BO, but no actual two-way QSO has resulted.

576 Mc.—Just to show we are not fooling, something can be put in under this heading apart from nil! 6WJ has his ASB4 converted for 576 Mc. and has received his own tx, a pair of RL18s, over about a quarter of a mile with colossal signals. A small parabola was tried, and despite the fact that it was not really large enough, exhibited some very marked directional characteristics. Warren attempted to get a pair of 15Es going, but gave up when, after four duds out of six, he could just about see the grids of the remaining good tubes through the plates when h.t. was applied! If I know Warren, he'll soon be trying again.

Talking of 15Es. Overheard 5EN on 21 Mc. the other day announcing his intention of putting 100 watts from a pair of 15Es into an enormous Sterba curtain for 1 and 2 mx beamed on VK8. Well OM we certainly wish you luck and offer any co-operation you may call for.—6HK.

Mullard

GEIGER COUNTER TUBES

The range of Mullard Geiger Counter Tubes includes types for the detection of Gamma radiation and Alpha and Beta particles and photons down to very low energies. All types are halogen quenched having a long life, and operating over a wide temperature range.

Of special note is the MX103, a low voltage, all metal, self-quenched gamma counter suited for portable radiation detectors and which along with the other types was developed in collaboration with the Atomic Energy Research Establishment, Harwell.

Type	Application	Overall Length	Overall Diameter	Threshold Voltage (max) at 20oC	Plateau Length (min.) at 20oC	Plateau Slope %per 100V (average)	Operating Temperature Range	Unshielded Background Counts/ min. (max)	Background Counts/ min. Shielded 2 in Pb ½ in Al	Window Thickness. mg/cm2	Dead Time US approx.
MX103	Gamma Counter	195mm	29mm	370V	100V	8%	-55 to + 75°C	110	—	375	130
MX108	Beta/Gamma Counter	110mm	26mm	370V	100V	8%	" " "	45	20	10	100
MX113	Alpha/Beta Counter	85.7mm	14.2mm	575V	150V	6%	" " "	—	6	1.6 to 2.1	50
MX114	Beta Counter	95mm	33.3mm	600V	200V	6%	" " "	—	40	3.5 to 4.0	150
MX115	Gamma Counter	110mm	26mm	370V	100V	8%	" " "	45	20	375	100
MX118	X-Radiation Counter	168mm	26mm	1140V	200V	8%	" " "	—	80	3.5 to 4.0	150
MX122	X-Radiation Counter	168mm	26mm	940V	200V	8%	+10 to + 76°C	—	80	3.5 to 4.0	350

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FEDERAL, QSL, and DIVISIONAL NOTES

FEDERAL

APPOINTMENT OF NEW FEDERAL SECRETARY

After almost four years of service as Federal Secretary of the W.I.A., Max Hull, VK3ZS, has tendered his resignation from this important office. Doug Bowie, VK3DU, has been appointed in the place of Max and a hearty welcome is extended to him.

Max intends to stay on as Public Relations Officer with the Federal Executive and he hopes to carry out a few duties that take up less of his valuable time. His appointment as Public Relations Officer is dependent upon the result of the current motion before the Federal Council asking for its approval to the expansion of the Federal Executive to incorporate two more voting members than has been hitherto.

The Executive has realised for quite some time that a Public Relations appointment was necessary to bring the activities of the Institute more before its own members and the public alike.

NEW LICENSES TO U.K. AMATEURS

As from 1st June, 1954, the British Post Office commenced issuing new Amateur Licenses to United Kingdom Hams. The new licenses are to be known as:—

The Amateur Sound License
The Amateur Sound-Mobile License
The Amateur Television License.

Although the full details of the new licenses are not available, the liberal outlook of the British Administration is reflected in the terms of the various documents concerning them. Such an outlook must give great impetus to the training of technical personnel for the various broadcasting services including television, and no doubt the British Post Office have long realised that the Amateur ranks is a logical source to first create the interest, then to semi-train technicians for the future requirements of the country.

The Amateur Sound-Mobile License is of particular interest. It is granted for a period of one year upon the payment of a separate fee (this has not yet been decided), and permits the licensee to operate a telegraph or telephone station anywhere, subject to certain regulations, except on the sea or within an estuary, dock or harbour. The possibilities for the newly formed British Amateur Emergency Networks with a license of this nature is immense. It is hoped that one day the Australian Administration will see the value of such a license and follow in the footsteps of the British Administration.

NEW ZEALAND CALL BOOK

An order has been placed with the New Zealand Amateur Radio Transmitters (Inc.) (N.Z.A.R.T.) for a supply of the ZL Call Book. These will be distributed throughout the Divisions of the W.I.A. and possibly through some of the booksellers. It is expected that it will sell for approximately the same as the Australian Radio Amateur Call Book.

There is only a limited quantity available so place your order with your Division, the Victorian Division, or the Federal Executive now to avoid disappointment.

And talking of Call Books, if you would like a copy of the R.S.G.B. Call Book listing all the calls of Amateurs in the British Isles, write to Federal Executive and let us know; when the exact requirement is known, an order can be placed with the R.S.G.B. for a supply.

T.V.I.

With television coming ever nearer, Amateurs —particularly those in the metropolitan areas of the two major Commonwealth cities, Sydney and Melbourne, where the first television transmitters are likely to be erected—are reminded of earlier warnings in these columns and suggestions that when re-building equipment the experience of overseas Amateurs be regarded earnestly with a view to the inclusion of modern t.v.i. techniques.

Some two years ago the Federal Executive imported a quantity of **Remington Rand's Television Interference Book** which will prove of immense value to those who sent in for a copy.

The Radio Society of Great Britain has now released a booklet called "Television Interference," which should be in every Ham's library. It is intended that a quantity of these be purchased from the R.S.G.B. and distributed to the Australian Amateur at cost. The booklet covers a comprehensive subject very ably and in a most practicable manner in six chapters. If you desire a copy reserved for you, write in to the Federal Secretary, Box 2611W, G.P.O., Melbourne, without delay. The exact landed cost is not yet known, but it will be a moderate charge. Be prepared for t.v.i.! Don't get caught.

VK5 TO TAKE OVER FEDERAL CONTESTS

As was mentioned in these columns last month, the South Australian Division of the Institute has agreed to supply the personnel for co-option by the Federal Executive to form the Federal Contests Committee for 1954-55.

In typical style, this active Division has "hopped" into the Contest business already and the following is a list of names of those comprising the Committee:—

Gordon Bowen, VK5XU (Chairman)
Reg. Harris, VK5RR
Jack Vivian, VK5FO
Reg Galle, VK5QR
Warwick Parsons, VK5PS
Jack Coulter, VK5JD.

OMISSION!

The Department has advised that, inadvertently, the name of Mr. J. E. Rumble, VK6RU, was omitted from the names of those comprising the Amateur Advisory Committee in Western Australia published in the June issue of "Amateur Radio."

A.O.C.P. CANDIDATES' FEES INCREASED

Amendments to the Wireless Telegraphy Regulations (S.R. 1954, No. 50) providing for the new Limited A.O.C.P. also prescribes new scales of fees for examination for all Wireless Operators' Certificates of Proficiency issued by the Postmaster-General's Department.

The undermentioned fees apply as from the 7th May, 1954, for examination for the various classes of Certificates of Proficiency:—

First Class Commercial Operator's Certificate	£2	0	0
First Class Aircraft Operator's Certificate	£2	0	0
Second Class Commercial Operator's Certificate	£1	10	0
Second Class Aircraft Operator's Certificate	£1	10	0
Broadcast Operator's Certificate	£1	10	0
Third Class Commercial Operator's Certificate	£1	0	0
Third Class Aircraft Operator's Certificate	£1	0	0
Amateur Operator's Certificate	£1	0	0
*Amateur Operator's Limited Certificate	£1	0	0
Issue of Duplicate Certificate		10	0

* Amateur Wireless Station Licenses issued to the holders of this class of Certificate authorise the operation of radio telephone equipment in Amateur frequency bands 144 Mc. and upwards.

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FEDERAL QSL BUREAU

RAY JONES, VK3RJ, MANAGER

Noel ZL3OZ (ex-VK9NR, VK3NR, and VK5NR) has apparently finally shaken the wanderlust from his shoes. Noel expects to return to Melbourne with XYL and family in August. He expresses the hope that it is his final move, and the desire to settle down to prosaic suburban life.

AB1US, Vince, of Taipei, Formosa, gives QSL QTH as care APO63, Care Postmaster, San Francisco, Calif.

'ZC6UNJ, who has recently arrived in ZC6 from India, complains of the heat in ZC6!!! He requests QSLs via R.S.G.B.

An A.R.R.L. W.A.S. Certificate issued to Al Scarlett, W2CC, in May, 1954, bears the number 4,825. One issued to the writer in May, 1950, is numbered 3,355, showing that almost 1,500 have been issued in four years. Almost one per day.

In connection with the Columbian Celebrations, 1954, to be held in Genoa during October next, to honour the memory of Christopher Columbus, the 2nd International Meeting of Communications will be held. The meeting will take place in the historical Palazzo San Giorgio. The Mayor of Genoa advises that the Columbian Institute of his city has established several awards to be presented to Amateurs who, by September 1, 1954, have made outstanding progress in the technical field and those who have provided the most exceptional public service. Two gold medals and diplomas will be awarded to those two Radio Amateurs, one of whom is Italian, who establishes two-way communication of the greatest distance on v.h.f. and u.h.f. from their home stations. The 145 and 420 Mc Amateur bands may be used. For the purpose of compensating for propagation differences and to allow for comparison of the records obtained on the two bands, the distance obtained on 420 Mc. will be multiplied by three. Additionally, a gold medal and diploma will be presented to the Amateur who is judged to have rendered the most outstanding service for the safety of human lives or who will have given in any way proof of human solidarity. Diplomas of honour will be issued to those who are judged second and third. The competition is open to all Radio Amateurs and applications should be sent via registered mail to the Civico Instituto Colombiano, Sezion Concorso, Radioamatori, Palazzo Tursi, Genoa, not later than September 1, 1954. Members of I.A.R.U societies competing for the public service award should apply directly through their I.A.R.U. society.

X1NP, mentioned in these notes in June, still is pursuing his merry way and making many contacts. His "ship" is moving rather slowly as at 1st June he gives position as off Cape York. Claims that in one month he will be operating off Portuguese Timor, and has been commissioned by numerous W stations to ascertain the whereabouts of CR10AA, active a few years back. X1NP, who studiously avoids giving any personal details, now claims that he will QSL 100 per cent. at a later date (how much later he does not forecast) and now is looking forward to receiving cards. We accept his promises cum grano salis.

Cannot dig out any VK station who has contacted Bill Storer, VK1EG. Writer and VK4FJ are anxious for details of such contacts. However cards have turned up indicating that Bill has at least made an appearance on 14 Mc. on April 21, May 10, 11, 13 and 18 with contacts with ZS6BW, ZS6FN, ZS6Q, PY2CK, VQ2DT and ZL1HY. Most of these contacts have been made around 1130/1230 G.M.T.

Further to the para regarding the Vasteras Radio Club W.A.V. Award, appearing in the Federal notes in June "A.R." This award is not as difficult as would first appear, as there are over 100 Amateurs in the district. A list of most of their call signs is held at this Bureau and a check of call signs will be made for any interested applicant.

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NEW SOUTH WALES

The May general meeting of the N.S.W. Division was held on 28th May at Science House, Gloucester Street, the assembled audience being the largest to have attended a meeting for many years. It was an occasion when members were invited to bring their XYLs or YLs and it was noticed that there were many of the ladies among the audience.

Jim Corbin, 2YC, President, opened proceedings at 8 p.m. and after the reading of minutes by the Secretary, Harry 2ACH, little business was discussed. The President welcomed the visitors, 5CH, 5KS, VR4AE and 2GU, the latter being thanked by the President for his past help to the Division.

An excellent showing of films followed, the main attraction being the official film of the 1953 Redex Trial which was much appreciated by all, and which was, after proceedings had ended officially, the subject of many discussions around the hall. Bob 2QZ gave a brief resume of his recent trip to the Trobians and other places north, followed by a few observations

MY XYL SAYS!

WHY is it necessary to keep repeating on the air, and in this magazine, so often, that there is in existence a "Gentleman's Agreement" on the more popular Ham bands.

My XYL says that if a Ham is a born gentleman he won't need to be reminded, and if he is not a gentleman, then he won't know what to do, no matter how often he is reminded.

Of course my XYL is ignorant of the finer points of Amateur Radio and can be forgiven, if not silenced!

—OIGLE.

from 2AET on his trip to U.K. These were much appreciated by their listeners.

Coffee followed and the balance of the evening was devoted to a regular rag chew by all present, new acquaintances were made in many cases and many old ones renewed. A most enjoyable evening was spent by all and it is hoped by many that the same thing will be organised again in the near future.

At the initial Council meeting held a few days previously, the following officers were elected for 1954. Two members were co-opted to Council, Chas Quin, 2AWQ, and Vince Bennett, 2VA. President, J. Corbin, 2YC, Vice-Presidents, Bill Lewis, 2YB, and Chas. Quin, 2AWQ, Secretary, Harry Hickin, 2ACH, Treasurer, Stan Bourke, 2EL; Publicity Officer and Sub-Editor, Ted Whiting, 2ACD, Circulation Manager, Bob Roach, 2ARI, Class Manager, Don Pollard, 2ASW, Class Secretary, Ken Kimberley 2AXZ, Class Supervisor, Leon Parr-Smith, 2AOJ, and QSL Officer, J. Corbin, 2YC.

EASTERN SUBURBS

Activity in these parts is spasmodic on 40 and 20 mx, with only one station in the area putting in a peep on 80 mx. Had a yarn the other Sunday p.m. on 20 mx with Jack ex-2EZ, who now is 6EZ. Jack likes his location, says his nearest local VK6 is 20 miles away, he has an occasional visit from that ancient mariner, Dave 2AYE, who is still in the planning stage for his M/M rig. Andy 2AX is acting the Good Samaritan in helping Dave to get a "boxatrix" perking. Haven't heard a thing for ages of Em 2ASE hope all is well with you OM. More active than of late, Harold 2HP has been chasing a few r.f. ergs up the wires and is to be heard a bit on 40 mx phone. A nice transmission OT, whether it's the N-S or E-W antenna. Harold doesn't seem to be so keen on 20 as of yore, 40 is the relaxation now.

A recent acquisition on 20 mx phone is Brian 2ABJ, who gets a share of DX from Bondi, using a vertical half-wave with some success, but is laying plans for a beam. Outstanding 20 mx phone DX man in this area is Horrie 2FA. Have seen reference in G DX reports of Horrie being level pegging with the hefty signalled 2QR, no mean achievement. 2FA has but a 3-el. beam and is about on sea level overlooking Sydney Harbour. Sheer doggedness and knowhow does it. Just to make sure of things, Horrie has an elevator control on his beam mast and can vary the height of the array whilst nailing down Gs and suchlike. 2FA also has phase modulated n.f.m. up his sleeve if the b.c.l. gets troublesome. Ivan 2TN has been visiting Kiwiland and may be heard at times on 20 mx phone, keeping up the personal touch with the many ZLs he met. Ivan has a penchant for car mobile work and is an active member of the Waverley Radio Club, which, by the way, is a real old timer. It was about the first Radio Club in Sydney in the pioneer days and now seems to have outlived all others.

Harry 2MB has moved from the immediate area and is now ensconced in Redfern, whence he may be heard at times with good telephony on 20 mx. Ray 2AIG is due for congratulations on recent promotion in the ranks of law and order. Understand he is planning an extra special electronic bug which will not only make dits and dahs, but will take over like George, the automatic pilot! Ray sticks to what some lads are inexperienced enough to dub "an antiquated form of communication"—brass pounding, maybe, but it still has its uses and always will, at least in this generation. Nevertheless, he is often heard on the mike, mainly when visiting 2AX. Gone from this area is Jack 2FJ, another DX man who has acquired a "quiet" location, far removed from built up suburban areas. Gone also is Bruce 2AZH, now heard from South of Sydney, and the Prince of many hobbies, Alf 2CE, so long in Bondi, is now over Ryde way. How is the concrete path laying going Alf, and what does it feel like to have enough ground space for antennae after the limitation in the old pozzy? I am told too, that v.h.f. stalwart, John 2WJ, has gone with the wind, and is now near Liverpool if near enough to National tx's John, you could light a spare lamp or two around the place? Hope the big fellas don't modulate your 6 mx tx as 2BL used to do with a prewar 5 mx Ham at Coogee! Canadian radarman, Jim Whittaker, licensed a year ago as 2AAS in Coogee, has also gone to graze in other pastures, now being heard at times from up Hornsby way.

An unexpected signal in Eastern Suburbs appeared on 80 mx phone in the shape of Mac ZL1AIT, with an obviously maximum ground wave. The reason, Mac, a C.P.O. Teleg. in the R.N.Z.N., was whiling away an hour or two in the "shack" on the cruiser Black Prince. He reckoned it was better fun than trying to compete with the boys from the W "flat top" ashore. Could be! Heard a local lad saying he might have a go at a transistor tx on the lines of overseas ideas. Reminds me of an advert. in a G mag. which illustrates audio coupling transformers for use with transistors, the overall size being less than a cubic half inch. What with deaf aid valves, etc., things are likely to get much smaller. Heard on 20 mx phone with a good signal is Phil 2ATA, could do with a spot more audio gain though. Nothing has been heard for some time of Colin 2ABD, but the grape vine has it that he is in the land of ZS6. Another bloke who has moved from the area is Lester 2KT, who is now west of the metropolis. Vince 2VA has been heard with a good signal on 40 mx phone, but it seems to have been a brief excursion. G stations reckon that Vince's 20 mx c.w. is one of those from VK that can always be heard under supposedly poor band conditions. Vince is still taken up with s.s.b. and is steadily re-building to rejoin pioneers 2AC and 2CP.

SOUTH WESTERN ZONE

Owing to inactivity there is not much this month, at least they have not been heard here. The Albury set have been quiet, although 2OJ was heard once. Noel was back on after an absence of two years, welcome back OB. Geoff 2BQ, at Tumut, went portable on 144 Mc on v.h.f. field day, conditions were not too good, but Geoff did manage to get one or two contacts—his best with 2WH at Forbes. Stewart 2PL, Ted Druitt and your scribe are contemplating a trip to Tumut on Queen's Birthday week-end. Looks like the scouts are out inspecting the location for the next Convention later in the year, the excuse being to call on 2BQ and 2PN. There is also a new Ham in Tumut, name and call as yet unknown.

Also heard that some v.h.f. activity can be expected from Wagga, from an R.A.A.F. location. This is really good news, perhaps the Wagga boys will let us have the score. Don 2RS, of Albury, has moved to new QTH, has a.c. on but is still QRP. 2BQ still playing around with cascode converters. Members of the Griffith Radio Club are getting gear together for the club station, brand new call sign is 2AGJ. Brian Jones has the rx finished and is waiting on Ted Druitt to build tx.—2AJO.

HUNTER BRANCH

Twenty-two members were present at the May meeting of the Hunter Branch held at the Tighes Hill Technical College. The meeting opened at 8 p.m. with Lionel 2CS in the chair and after the minutes had been read and general business had been dealt with, films

were shown dealing with "Radio Antennae" and "The World's Greatest Road Trial." Following the screening of these two films, Jim 2ZC gave an instructive and educational lecture on "V.F.O. Construction and Design" and gave a practical demonstration with gear he had brought along with him.

Frank VR4AE visited Ron 2ASJ during the month on his way south. Ben 2ABT and his brother-in-law, Bill 2ZL, also called on Ron and had an earbash session. Bill 2ZL hails from Toronto and is one of the "old timers," licensed in 1911. He aims to make a comeback using an AT8. Taree Bill 2AEY and Harold 2AHA repaired a relay for Ron that was on the blink. Associate Syd Daniels had a visit from Crief 2XO during the latter's holiday trip down the coast. Associate Frank Stubbs injured himself in a fall from a ladder, and Jack Hamilton (gentleman) has been doing a tour of duty as the voice of 2ASJ, enabling Ron to work his first DX for two years.

A miracle has occurred, Dave 2BZ has been heard on 80, 80 mx mark you and not 2 mx. He has, as a sideline, taken up the game of "top soil excavating;" pardon, golf. Harry 2YL bought him a GO9 tx, Jack 2KQ has been heard back on 6 mx, Jim 2ZC getting his share of s.w. DX on 40 and 20 mx. Chris 2PZ and 2CX migrating to 2 mx. The sympathy of the Branch was extended to Chas 2ARV on the loss of his father, and to George 2AGD whose uncle was killed. Mrs. Stuart, Ron's mother, has recently suffered a serious operation, but is recovering nicely. Ron has a new call book, present from the President and Council of the N.S.W. Division.

Harold 2AHA and second op., Ern 2FP, are to be congratulated on winning all prizes in all sections of the N.F.D. Tom Steel, 57, of Macquarie Street, Belmont, an invalid s.w.l., is anxious to get a good communications rx to assist him getting A.O.C.P., anyone interested contact Tom. The next meeting of the Hunter Branch at Tighes Hill Technical College will be at 8 p.m. on Friday, 11/6/54. Films and an interesting lecture are the bill of fare.—2AOR.

NORTH COAST AND TABLELANDS

Reports from this zone are scarce this month, conditions and the fact that few of the boys are heard are the reasons. Ted 2AVG, a new comer to the zone, but an old friend of all, is getting established, he is at present operating from Urunga, all bands. Pete 2PA and Noel 2AHH are conducting many tests with their beams, both working quite a bit of DX when conditions are OK. Much consideration is being given to future flood emergencies in the area and it is the considered opinion that the N.C. net is adequate, but that loose ends need to be tied up in Sydney and Newcastle.

Organisation for the next Urunga Convention is well under way. It will be bigger and better next year, so don't forget to keep the Easter week-end 1955 reserved for Urunga.

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VICTORIA

The June meeting of the Victorian Division was held on Wednesday 2/6/54 at the M.T.C. The gathering was the largest ever, no vacant seats were noticed, due no doubt to the presence of XYLs and harmonics. The films selected for the occasion were most suited for the families. The radio boys got small fare for once. As usual, the meeting adjourned to a Collins Street cafe where it finished at a very late hour.

Come the sixth and the intrepid hunters gathered in College Parade. Ten or eleven cars turned up braving the cold and dismal looking weather. Sharp on 2.30 p.m. the signal came on and the race was on. Last off the mark was 2AHC and party who had trouble with a short-circuited feedline. With 3OM and 3AFJ taking turns on the loop they ultimately arrived within 100 yards of the tx, only to find themselves on the wrong side of the ??!!!???''! river. (May your signal never exceed S2, Alf.) It was some consolation to know that others were in the same boat. After walking about 500 yards, borrowing a field strength meter, and waking a bit further, we completed the course only to find that five others had clocked in. First in was 3LN, 2nd Reg Bowen, 3rd 3VZ, with the rest following at close intervals. The location on this occasion was north of the river at Yarra Bend Park.

Now I'm not complaining—much—but I personally saw 3LN pass over one green article to 3YS before the start. Fred, how could you when I was down for a Zephyr Six Price cutting, that's what it is. Anyhow I'll get my revenge, I'll think rude things about Len's 2 mx rx. Best DX I heard was 12 feet.

Strange what a small world it is. Did you hear Phyl (Mrs. 3LN) reminiscing on school days with Harold 3AHC. By the way, what odds are being offered on Phyl getting her ticket before the end of the year. More on this in future issues.

Remember me yelling for a scramble. Well, I forgot to send in a log, hence I'm not listed in the results for the 11th April. Conditions for this scramble were ideal, particularly on 40 mx. Although quite a few stations took part, only nine logs were received. The winner was 3ADW with 46 contacts. Logs were received from 3ADW 46 points, 3AHH 41, 3AKO 38, 3XB 31, 3AJU 25, 3YQ 20, 3ATK 16, 3OM/M 11, 3AFO 8.

The next two-band Scramble will be held on Thursday, 8th July, commencing at 8 p.m. and concluding at 10 p.m. Any two bands may be used and the rules are the same as those for the last Scramble.

Had words with Ray 3ATN and we may get him on 288 Mc. in the near future. That's what we want, some country stations to toss together some gear for the band. Any other takers, say down Geelong way and Mornington Peninsular locations.

Next month's meeting has already been publicised, but had better do it again. A talk on Macquarie Island with pictures is scheduled. Eight p.m. is the time at the M.T.C. on 7th July. Have no information about the rest of the programme for 1954-55 as yet.

If Mr Editor will cut Grandpappy's notes this month, I may get in a few personal notes. 3TX is now the owner of an AR7; says the Type 8 is better, Bill, how could you? 3AP was heard calling Ws. Long time no see Al. 3TV back in harness after a long spell of leave. What's happened to 3DU. Has not been heard for weeks (he is the new Fed. Sec.—Ed.). 3UC has forsaken the key and is heard regularly on 40 mx with phone. Have heard nought of 3AAP for long while, must still be house building. 3ANS back on air after a re-build.

Now in response to a special request, will associate members, students, and others looking for practice, please note that Slow Morse Transmissions are made on Sundays at 2030 hours on 3504 Kc. The transmissions will be made by 3GU during July, 3AHH during August, and 3HZ during September. Reports on the transmissions are especially asked for. Reports may be sent either direct to the station concerned or to the W.I.A. rooms. The chaps doing this job are particularly anxious to know how they are getting out and how many people are taking advantage of the service they are providing.

Now for zone notes.

NORTH EASTERN ZONE

Jim 3JK was modifying equipment for mobile working the last time he discussed radio work. Cal 3WQ improved the last school holidays by visiting round the Melbourne Ham shacks. Doug 3IJ now has the timber for his new masts, while Chas. 3ACW has entered and safely returned from hospital. Alan 3BQ has visited Mangalore lately, and it is learned that Alan 3ALN is now at Nhill. Henry 3HP and Des 3BP have ATR2B transceivers. Murray 3HZ is a bit too busy for much Ham Radio, while Peter 3APP is quiet, but Alex 3AT is reported playing with colour photography. It is thought Les 3ALE said he was helping Johnny 3ACK with radio experiments.

Alan 3UI is developing a s.w. converter for b.c. receivers, but Keith 3JC must be on 20 mx all the time, where, it is understood that Ken 3KR is hearing interesting DX. Although Vic 3ABX has not been heard, Frank 3ZU was on our hook-up with an f.m. transmissions. Howard 3YV and Gordon 3XU have not been evident, and, although Hugh 3AHF has been able to take an active interest in our hook-up, apparently it has not been quite so practicable for Jack 3PP.

Tom 3TS should be around again soon, thus we may hear of the interesting activities of George 3GD. Jack 3AKC must be still busy on his commercial interest, although Des 3CO now has his new shack in operation. Our Associate Lex has his A.O.C.P. and has applied for a station call sign, congrats OM. Syd 3CI, as usual, breaking his v.h.f. records with Nagamble-Dunkeld on 2 mx, but Stan 3AGT has been quiet again since last month.

CENTRAL WESTERN ZONE

As usual at this time of the year 80 mx is the outstanding band of an evening. Just to prove that statement, our last two zone hook-ups have included Chas. VK1AC on Macquarie Island, who has been putting in a consistent S8 signal here. Chas. is experiencing gales and blizzards now and I guess has the agility of a monkey now as far as shinning up masts to replace antennae are concerned. Conditions on 80 mx should remain good for a few months now, so Chas. should be able to keep well up with the zone doings.

Keith 3AKP has at last located the zone's frequency meter and is busy calibrating his own with same. The next step then is to get his gear going on 80 mx and join in the zone hook-ups. Dick 3RR is at present only on 6 and 2 mx, due to his low frequency antenna parting company with the mast—at the top, darn it. Byron 3TA has dismantled his 3-el. rotary on 20 mx and is busily engaged in constructing a bigger and better version of the same thing, however more details on that score next month.

Ray 3FI has forsaken Ham Radio for photography, but only temporarily we hope. Merv 3AFO has completed his 5 x 5 on 2 mx and by the time this reaches the printing stage should have it forty feet up and working well. I hope Neville 3ACN has devised a 40 mx fixed beam antenna. By the way we have an ardent s.w.l. in Neville's mother. Yessir even to having her own communications rx. That's fb., and may you enjoy plenty of good listening. Alan 2HL, of Callawadda, has had a spell in hospital, but is now home again. We all send our regards Alan and hope you are now completely recovered.

Trev 3ATR has now completed his g.d.o., so now is all set to get cracking on 2 mx. Bill 3AKW has been very busy with commercial radio of late, but now has everything under control. Now you have time on your hands, Bill, how about digging out your 2 mx gear from the cupboard and be in the swim? Still no sign of our long lost central westerners, Jim and Bob, hope to hear you about before many moons. Well cheers for now chaps, see you next Wednesday night at 7.30.

SOUTH WESTERN ZONE

The State Convention will be held in our zone this year on 28th and 29th November at Ballarat. Bill 3AMH and his boys will make it the best State Convention yet. The main events this month seems to be the activities on 144 Mc., so you city lads have a listen this way now and again. Active stations include 3AGD, 3AKR, 3AGV, 3ZL, 3HG, 3JX, 3EQ, 3ANQ and we look like getting more in the near future. Kevin 3AKR has had a spell in hospital, but out again. John Adams has collected his piece of paper with the call 3ARJ, and is active on low power. At last we have talked Les 3DX back—c.w. on 7 Mc. and he is talking 2 mx. 3ALG often on the hook-up, but his receiving conditions no good. Other Geelong members heard on 80 mx, but never in on the net. All members awaiting disposals screed with lots of interest.

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QUEENSLAND

May meeting, the first after the election of the new Council, was high lighted by an address on D.M.E. by Mr W. Allison, of D.C.A. This address was exceptionally interesting, and all were sorry, after two hours of it, that we had to call a halt so as the normal business could be attended to. Mr Allison has promised to continue at our next meeting. I'm sure it will prove equally interesting.

Owing to the absence of our President and Secretary, yours truly and John 4FF deputised for them. With no agenda, we struggled through in some manner, and was around eleven when business concluded. Amongst those present was noticed Tom 4TT, Jack 4BF from Ipswich, and Keith 4KF.

Certificates were on hand for John 4RT and Keith 4KS for their top scores in this State in the respective sections of the VK-ZL DX Contests. Keith also was awarded a pick up for the highest points gained in this State. While on Contests, let me digress a little to remind you that the R.D. Contest is looming up again and we want all Amateurs we can muster to submit a log in this State. Also there are plenty of log sheets for those who require them at a penny each.

An AT8-AR8 combination was on show which will be balloted for in the usual manner. The Call Books came to hand per favour of Dave 2AYE, which we must thank him for, so put in your order now.

July meeting should be of interest to those interested in remote control of models as 4NP will give a lecture on model aeroplanes and remote control of same.

Arthur Waltz has the responsibility of being the new Federal Councillor and at the same time being the Traffic Manager for this Division. Arthur of course is one of the foundation members in this Division and should need no introduction to members.

Conditions in and around Brisbane have been very dead of an evening. Myself, I haven't bothered to turn the rig on. Saturdays and Sundays see a little activity, but mostly chaps chasing the Ws who have been coming through. Bill 4YA has pulled his 2-el. down to put another element on it. Frank 4ZM has put up a vertical and also his power. John 4FT has been nattering around on 3.5 Mc. with quite a few others there with him.

Heard a few of the Ipswich gang on short skip a few evenings, while my spy up there informs me news is very scarce, very few active up that way. Those active: Harold 4HG, Lean 4FW, Norm 4KO and Jack 4BF, who sked at

7.15 p.m. to discuss the pros and cons of Amateur Radio and what have you. 4SC, an ex-VK7, should be on there in the near future. Harold 4HG is just about ready to hoist his 10-20 mx beam, and is pinch hitting on 40 mx with a long wire. Leon 4FW has started on his new beam, being one of the many who lost theirs in the recent cyclone; he has a double extended zepp at present. Norm 4KO has decided it's about time he brushed the cobwebs off his beam and put it up. Jack 4SF is going in for s.s.b. and about to give all and sundry a headache copying him; he also is trying out a double crystal filter in his rx.

To the north, news is creeping through of the activities up that away. Gympie boys are very quiet. 4XR has not been heard on any band, nor has he a 7 Mc. antenna yet, but has a very nice set up in a 100 Kc. osc. and multivibrator. Jim 4HZ has his eagle eye on it to do a spot of calibrating one way or the other; he has been hearing some nice DX on 21 Mc., but has had no luck in contacting any of it. To make up for it, has had some nice rag chews on 3.5 Mc.

Col 4CR very busy with recordings and playing them over the local b.c. tx at appropriate times, while his antenna is still in a semi-horizontal plane; where didn't that cyclone hit. The latest set-up by Barry 4LN is a junk window in the town, where he has sundry bits and ends for sale, including a battery version VR106, the one on a.c. I believe he has kept for his own use.

The Rocky gang instead of chit chat from band to band have organised a radio club comprising twelve Hams and four s.w.l's. and all, I believe, members of the W.I.A. They have taken the 4WI broadcast on the formation of groups as a guide to their plans. The club is meeting on the 13th of each month. The officers are 4NG President, 4FU Vice-President, 4MT Secretary, and Treasurer is my old friend, Bill 4WD. Members include 4CD, 4DI, 4DO, 4BV, 4EC, 4CJ, and 4ZL. My information does not include where the meetings are being held, but to others interested from that part of the Division, Bob Greenwood, 4NG, at Box 250, Rockhampton, is the man to contact. We here in Brisbane wish the club every success, and would like to get a monthly account of your doings. This is a lead for other country centres which could be followed to their advantage.

This is all for now chaps, I hope one of these days I'll be able to fill a couple of more columns like the old man from the b.b.s.s. I suppose the VK3 boys, instead of offering him the chair, on his present visit, offered him a wheel chair instead, but not being a grand daddy and years of experience in padding behind me, you'll have to put up with my poor efforts for the time being. So cheers for now and remember, August is the month for the R.D. Contest.

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SOUTH AUSTRALIA

The monthly general meeting of the VK5 Division for May was held in the clubrooms to a capacity gathering of members to the tune of 120. The guest speakers for the night were Mr. Hec. Brock (5UZ) and Mr. Clem Tilbrook (5GL) and they chose for their joint effort the subject of "Quartz Crystals." This teaming up of two chaps who were without doubt masters in their own particular line was a huge success, as Hec. handled the theoretical side and Clem the practical, to the full benefit of all present. Naturally both gentlemen could have used another hour or so of time to fully cover their subject, but I think that all present will agree that they both contributed their share toward an excellent and instructive lecture. Neither gentleman needed much introduction as Hec. is a definite oldtimer in Amateur Radio, and whilst Clem is not such an oldtimer, he can safely claim that he is as well known as most oldtimers for his experiments in crystals and the v.h.f's.

Both lecturers brought along an unusual number of exhibits which were displayed on the main table and the boys present were given time off to examine them, all of which added to the general interest of the lecture. The vote of thanks proposed so ably by Brian 5CA was seconded by the audience in the usual manner and was clearly indicative of the splendid job performed by the joint lecturers. Strangely enough, even without me in the President's chair, very little general business was transacted and the main excitement for the night came from the handing out of the new Call Sign Books. I had a bit of bad luck with my Call Sign Book, because I discovered that the cover was a little dirty in places and I sneaked up to the main table and rung the changes for another one. Later on in the night, I remembered that I had put a QSL card from an LU station in the back of the first book and immediately started a frantic man-hunt to find somebody who had received the book. After disrupting the meeting, and causing untold confusion with my mad dashes up the aisles and over the chairs (easy, grandpappy, watch your heart.—Ed.), I finally located the book and also the card, and was gently led away and placed inside an iron lung until I had recovered my breath and also my peace of mind.

The meeting closed at the normal hour of 10.30 p.m., that is officially of course, but apparently continued for some time outside the clubrooms judging by the murmur of voices that filtered through the main door as the willing slaves swept up the floors and generally tidied up. Among the visitors were Messrs. Col Ferguson (5CJ), F. Anderson (5FA), E. Redpath (ex-G2DS and now a VK5), D. Pollard (2ASW), L. Hazell, and H. Gabb. We welcome these visitors and hope to see them again some day, possibly as members, although of course some of them are members, but from the country.

The last paragraph in the VK5 notes just received, caused me to come all over soft hearted toward the acting scribe who signed himself Pro 5PS, in fact I almost reached the point of giving him a curt nod of recognition at the Council meeting. However, I took myself in hand secure in the knowledge that he was only protecting himself for the months to come because you see he only gets one month in the year to have a shot at me, but I get eleven. Incidentally, did you get the significance of the christian names of my grandson —Christopher Warwick—get it? CW—get it—CW—Oh I am a one!!

WOOMERA RADIO CLUB

The Secretary of the Woomera Club, Ron Catmur (5FY), has been forced to give the job away on account of being too busy with his vocational duties, and his place has been taken by Max Newell. Ron's resignation was accepted with regret as it will be remembered that he was one of the few who fought and battled for the Club and brought it along to the present stage. However, the bread and butter must come first and we can only say that he will hand the reins over to Max with the knowledge of having done a swell job. Nice work Ron, and the Woomera Club will always remind us of just what can be done by a Ham even in the furthest places and against almost impossible odds.

The main activity for the month has been the erection of their two element rotary beam on 20 mx, and it now graces the sky some fifty feet up, but will not be tuned until the next week-end. A big portion of the credit for this undertaking must go to the President of the Club, Len 5OC, and no doubt he will be right there when the tuning up takes place.

Two visitors to Woomera during this month have been 5ED and 5JN, and it is with regret that we announce that the Club was unable to turn on much rare DX for them because the bands were practically out of commission each time they tried. Ray Farmer now has his A.O.C.P. and will be able to help Len out with his duties at the clubrooms and that being the case, they will be able to get some of the b.c.i. troubles ironed out on 40 mx and thus have another band at their disposal. The boys have hopes of getting some v.h.f. gear together and going on the air soon, but just when that will be, is undoubtedly some time yet.

Ted 5JE has not been around much lately, but as he is in the process of building a garage, it is only to be expected. Several new members were welcomed to the Club at the last meeting and a couple of them hope to sit for the next exam., which is good news, whichever way you look at it.

I should close these Woomera notes with a short reference to the new Secretary, whom I thank for these notes. However, it would seem that he is another one of those modest coves who believes in hiding his light under a bushel, something like me, only it takes two bushels to hide mine, therefore I can only put one of my espionage agents to work and ferret out the information for myself. Until then, I will content myself with saying that the Woomera Club is lucky to get somebody with the enthusiasm necessary to hold down the job of Secretary, and I feel sure that they will give him all the help that he will find necessary. Thanks again Max for the notes, and don't worry about them being short, any notes are enough for me, no matter how little, they don't call me "Padder Parsons" for nought.

A welcome visitor to the "City of Lurches" (now they have me saying it), was Murray 4KX (ex-2AKX) and now radio officer on the S.S. Age. Murray paid several visits to various Ham shacks including 5HN, 5ON, 5MD and 5JO. I understand that he was somewhat surprised at the hospitality that was turned on by the VK5 boys, although hospitality is VK5's second name. He also commented on the VK5 notes, but my natural modesty curbs my itty-witty tongue.

Several Associate members of the VK5 Division have been moaning a bit about the A.O.C.P. examination questions being a bit tough at times, in fact one member even put his moan on paper to make it a bit more official. Council handed some copies of previous examination papers to a member of the Technical Committee for an opinion before making any comment and his opinion is awaited with interest. However from a personal glance at the papers, and well remembering just how much I did not know about radio when I sat for my examination, I did feel that the papers today have a tendency to become too theoretical in their approach to Amateur Radio. When all is said and done, the examination should only serve as a guide to the Department, to determine whether or not the candidate is a suitable person to issue a license to, so that he may experiment with radio and learn by practical experience all the answers that puzzle him at the moment. Of course I might have the wrong slant on Amateur Radio, perhaps they should start off where most of us finish, but what a lot of fun and comradeship they will miss.

SOUTH EAST AREAS

5TW has had a few contacts on 40 mx, but Tom is still busy on the new QTH, and likely to be so for some time to come if my experience counts for anything. 5CH is at the moment of writing holidaying in VK2 and I am wondering just how much gear he will bring back with him on his return. Every time I have a chat with Claude he seems to have added to his collection of gear, although from what I have heard of those VK2 jokers, he will be lucky to come back in one whole piece! That might work, I have never had a bite from VK2 yet.

5KU has at last got the beam back in position, and with a new shack and the beam working well, we should hear a lot from Erg. 5TD has had a visit from, as the VK7 scribe so aptly puts it, the wireless bird, who left a baby daughter. I have had no details as yet, but all are well, including John. I have said before and I say again, always heed the gypsies warning, DX before dishes!! 5JA continues to elude me and I can always have a paragraph about John ready even before I receive the notes from Col., it is simple, "nothing to report." 5MS is having a little beam trouble. Stewart is finding that the ideal spot for a beam is also a pretty good place to collect the high winds, however if all that I have heard about him is correct, he will soon find a way out of this temporary trouble. I have heard that a new sub-station has been put into operation near his QTH, and I guess that he will be pleased to get primary voltages above 180 volts. Pardon me going all technical.

5PB, who comes under the heading of the Mt. Gambier boys nearest neighbour, about 80 miles away at Naracoorte, called in there the other day and from all appearances he intends to get going again. Wally was at one of the VK5 meetings recently and gave me the same idea from the way he spoke.

5CJ is still fairly busy settling in at the new QTH and has no activity to report on the air. Regarding that alibi of Pro 5PS last month, don't you believe it Col. I sent him the notes on time, but he was so frightened that I might come back from my holidays a bit earlier and finish the notes that he rushed them off a week earlier. Pro 5PS indeed, the Greeks have another word for it! It was good to see you at the meeting the other night Col., sorry that I did not have a longer chat with you, but you know me, nose to the grindstone Parsons.

Judging from the tone of the letters received from the country and also from what I have heard on 40 mx, oh yes I am on 40 mx, haven't you heard me, it would appear that the VK3 tapes that are being sent out are meeting with everybody's satisfaction. The only winge, if it could be called that, is that it is a pity that they are not sent out each month. I agree with this opinion, but also I realise that Gordon 5XU is a busy man and can only devote a certain amount of time each month to compiling them. However, he will do all he can to fix this.

It has been increasingly noticeable in the VK3 notes in this magazine that the scribe, Mr. K. E. Pincott (the Mister is a courtesy title only, on my part) takes a great delight in "needling" me at every opportunity, and whilst my gentlemanly instincts prompt me to treat it all with ignore, his last attempt in his notes for June force me to unmask his perfidy. You don't know what that means? Well that makes us square, because I don't know either, but it looked good. However, I smelt a rat when I read his remarks about the compilation department slicing half of the VK5 notes so as to include his personal paragraphs. Hastily turning back the pages of the magazine to the first page, what did I see, I repeat, what did I see? Yes, you said it. Compilation department, K. E. Pincott. How low can they stoop to upend me, how low can they stoop to take away the few measly pence that I earn from my writings and thus keep the wolf from the

tent door? Well, I suppose that I have had a good innings, I shouldn't complain, but in future copies of the magazine when the crumbs that they will print for VK5 in "Hamads" makes you wonder what has become of "Padder Parsons," pause and spare a thought for a good guy and remember "Pincott's Perfidy." Go on, slice this paragraph out "P.P."

The Council of the VK5 Division appointed the following members to the Contest Committee for 1954-55: Messrs. Gordon 5XU, Jack 5JD, Reg 5RR, Jim 5FO, Reg 5QR and Warwick 5PS. This line-up looks good on paper and they have the power to co-opt further helpers if wanted. It means a lot of work, but they are all triers.

UPPER MURRAY AREAS

The monthly meeting of the Upper Murray boys was held at the QTH of Fred 5MA and the roll-up included 5RE, 5KW, 5CF, 5TL and a couple of interested visitors. Hughie 5BC was unable to attend owing to a previous engagement, the proceeds from which help to keep the wolf from the door each week and also permit him to buy and make that concoction which he has the cheek to call a cup of tea. The new call sign books were distributed to all present and favourably received, even 5KW being satisfied that his name and address was correctly listed, to his amazement.

One of the visitors, who admits to Ukranian origin and to having spent a portion of his life in the Russian Army, and also to being attached for some time to the Royal Scots Guards, gave an interesting talk on his experiences with the two armies. He had an acquaintance with radio in both armies and gave a brief description of the gear to his listeners and also made it quite clear that life under the control of the Soviet Union has no appeal for him, an opinion that was shared by all present after hearing his little talk. The meeting concluded with a massed attack on the "goodies" so kindly provided by Mrs. 5MA, who could be pardoned for thinking next morning that the homestead had been the victim of a grasshopper plague or an invasion of white ants, judging by what was left on the table. Needless to say, a good time was had by all.

5MA has dismantled his beam tower and it is now taking shape as a tank stand under the skilled workmanship of Fred and that MMMaster PPPlumber, Tom 5TL. Fred is also nearing completion of a band switched tx with a single 807 final, with a preponderance of EF50s, the lot being constructed on a copper chassis. The MMMaster PPPlumber again Fred? 5RE has had a gremlin who delights in melting the fuse wire without any clues as to the origin. Hurtle was not able to keep his usual Sunday morning schedule recently because his next door neighbour was erecting a galvanised iron fence and the QRM was of good strength and quality. Not the MMMaster PPPlumber, Hurtle?

5KO has not been heard or seen by anybody but there is some excuse for Alec because he has been very busy at his new occupation and also at his new QTH. 5KW finally got round to showing up on 7 Mc. the other Sunday lunch-time, but has been somewhat in hiding for the rest of the month. The family Citroen now has an Austin engine reposing under the bonnet and is now known as the "Citroen-Austin-Vonthetoff special." Its frequency is dubious, but it has an audible noise response at twenty miles an hour. Nice work Harry.

5TL has little to report on his personal activities on the air apart from a contact with Charlie 5ON who informed Tom that he proposes a trip to Berri in the near future and will be able to attend the June meeting of the boys, which incidentally will be held at the QTH of 5KW. A visitor to the Upper Murray areas was Jack 5MR, from Stirling West, who called in on Tom and said that he would be back for a chat. Nothing has been seen of him since and Tom was wondering if he had fallen in the river, or got lost in the bush. Hurtle 5RE, as the local Coroner, reports that as yet no bodies or parts thereof are to hand.

During my holidays away in various parts of the country, I was approached by a Ham who shall remain nameless, for obvious reasons, who said that he knew that I came from the b.b.s.s. and he wondered if I was interested in auditioning an unusual act for the radio. To humour him I consented to look at the act which was a dog who played the piano and a pigeon that sang songs. Well, believe it or not, I actually heard the dog play and the pigeon sing, and without hesitation signed the act up for the b.b.s.s. at a good fee. After signing the contract, the Ham said to me that he was feeling a bit of a heel in having me on, because the act was a fake. This staggered me a bit because I had actually seen them perform, and it looked dinkum to me, so I said to the Ham, "Fake, what do you mean?" "Well, Pansy," he said, "the pigeon doesn't really sing, the dog is a ventriloquist!!!!"

WESTERN AUSTRALIA

Now is the time to thank Wally 6AG for his efforts as Sub-Editor over the last 12 months. I'm told it's not an easy task to compile something from nothing, although some scribes succeed with this admirably! Anyway, Wally has kept the flag flying and I hope to carry on where he has left off. But don't forget, if you want to see something in print or have some scandal that needs publicity, let me know. Just because you think about it, doesn't mean it appears in the next issue! So, to business.

Those who attended the May meeting were well entertained by the three lecturettes arranged by our new Programme Organiser, 6AG. Mr. Trigwell, of the Wireless Branch, spoke on Departmental frequency measuring gear and procedure, followed by Wally Coxon, 6AG, who summarized the results of the 80/40 mx news transmissions from VK6WI over the past seven months. The evening was concluded with a description by George Hayman, 6GH, of the video signal generator constructed by 6EC. This is a very fine piece of work and it is to be hoped that Eric may be persuaded to dash off an article on it for "A.R." in similar style to his "Amateur TV" series.

The meeting took great pleasure in welcoming Wally Howse as an Associate member. Nothing unusual there perhaps, but Wally is the first holder of the new A.O.L.C.P. to become a member of the Division—and may there be many more to follow! Good luck, Wally.

ODDS AND ENDS

6WZ in Geraldton, an ex-scribe, is still to be found in the general get-together on 7 Mc. of a Sunday morning. 6CN, of Kellerberrin, finds time to get on in between dispensing cough cures, etc. I believe a new rig is in the wind there, all ready for the s.c. when it arrives. A new contact t'other day was 6EZ from Safety Bay, with a thumping signal. John must have a good QTH because he is often heard on 14 and 21 Mc. over the 40 mile path to Perth with signals at full strength. "The Voice of the Golden City," so I'm told, is 6TK, of Norseman. Terry now sports a three element 14 Mc. beam atop a 50 ft. tower and is knocking off the DX in fine style. 6HK tried 3.5 Mc. one night—had two contacts, but gave it away after a soldered joint melted off the antenna tuning coil!

One of the backroom boys seldom heard these days is Lee 6HC, from North Beach. Lee is one of those experimental types, always building something new and always pulling it down for a re-build. Still the finished product is inevitably of commercial standard. 6JK, another of the silent brigade, is busy with studies. 6FL maintains he will not be in the R.D. Contest this year, but when the time comes, we'll see, eh Frank?

Our new President, Fred Tredrea, 6FT, does good work on 21 Mc. with 90 watts and a three element beam. Says he heard and nearly worked a VE8 on the band the other day around sundown. That's one for 3AHH to work out! Almost a stranger on the air these days, 6RU was heard on 20 mx. New plans are in hand there for a bigger and better set of beams to grace the backyard. 5WT can almost be bracketed with 6RU because of his location—two doors down the street! Dave is progressing slowly with the tower and beams, though a new high level modulator is taking up some time. 6MK was heard working 1EG at Mawson phone/c.w. Wonders will never cease! 6LL, our Treasurer, having just shifted QTH to Victoria Park, may be inactive for a time; we certainly hope not for long, Clarry.

Got quite a shock recently when 6AG casually mentioned that he uses a three wavelengths vee beam on 3.5 Mc. I think that almost takes the cake from 3ATN, eh Ray? I'd better be careful, maybe this will start claims for the longest antenna in VK. Wally is one of the very few "original" Hams in VK6 still active, if not the only one. He can speak with experience about such things as the old XYA, XYB, etc., series of call signs of the 1908 vintage, spark tx's and so on. This Radio game must be a mighty powerful drug! 6SR, the call of the Radio Society of W.A., has been heard again on 7 Mc. of a Sunday morning per the voice of 6SJ. Sid is somewhat hampered in his operating by living on a main highway (oh boy! That ignition QRM!) and by the fact that the S.E.C. 66,000 volt mains run right past his front door. Still, he gets by.

A problem which has reared its head recently in connection with the 6WI broadcast on Sunday morning on 7 Mc. is that of interference with 3WI on the same channel at the same time. A few years ago this difficulty of 2,000 miles QRM at 0830 on 7 Mc. would probably not have occurred, but in these times of low m.u.f's. it is there in full force. The obvious remedy—a QSY—will be or has already been effected.

Well, that's it till next month, chaps, and don't forget the copy.

TASMANIA

The June meeting turned out to be one of the best attended for quite a long time with the clubrooms almost filled to capacity. This was due no doubt to the first lecture arranged by the newly formed lecture committee, which was a talk entitled "With Heemskirk to New Zealand." This talk was illustrated by numerous Kodachrome slides and was given by Mr. H. S. Watchorn and Mr. E. E. Medhurst. Mr. Medhurst, owner-skipper of the Heemskirk, and a son of the late radio pioneer, VK7AH, also brought along a number of press cuttings and charts and judging by the applause and the questions, there is little doubt that the lecture appealed to all. A great deal of amusement was caused by the production of a "key" (left foot style) which was made up on board the Heemskirk when the modulation failed on the AT5-AR8 combination. Much hollow laughter from 7YY, who happened to be on the receiving end on that particular occasion.

Due to the popularity of the lecture, the business of the evening suffered somewhat and it was not until approximately 10.30 p.m. that the business really got under way, by this time a number of members had gone home and the few diehards left carried on.

The 7WI Exhibition QSL cards have been received from 7LJ and have turned out very well. At the time of writing, the cards have been filled in and will be ready for posting very shortly. By the time these notes appear in print, they should be well on the way to all stations who contacted 7WI from the Science Exhibition in January last.

7MY is on the air at last from Sandford on 2 mx and has had two-way contact with 7HJ on several occasions with strong signals both ways. My poor old 2 watts won't quite make the distance, but Alan puts in quite a good signal at the 7LE shack (when the hydro isn't on the air!). 7DH also reports hearing 7MY which is pretty good considering the 7DH location at Montague Bay. Two mx seems to be looking up in Hobart with 7OM and 7RM building the necessary gear and various others balancing on the brink.

The new 7WI shack is now almost completed and ready for occupation. Several working bees during the last few week-ends have resulted in benches, shelves and power wiring being installed. The walls and ceiling have been painted a delicate shade of cream and the tx is working and in position on its plinth. Tom 7AL is investigating the aerial position, but as yet has not been able to get on the roof because of the weather. Rumour has it that Tom intends putting up a T2FD complete with terminating resistor—aw nuts!

A donation of 24 sets of keys to the club rooms was received recently and this will help considerably in making the rooms available to members at all times. The keys may be had from the Secretary by both Associate and Full Members on payment of a deposit of 10/- per set, the deposit being refunded at such time as the keys are returned. Keys to the tx room will, of course, only be available to licensed members.

Tiny 7JD has been inactive for some time due to a move in QTH, but I understand that he is now completely re-building the rig into a console. The console, which has accommodation for 12 17-inch panels, is almost complete but the rig has yet to be re-built to fit. Tom 7FM is at present visiting Kelso and has taken a rig, so I'm told; opposition to 7PM Tom? Andy 7DA, originator of the lecture committee, at present very quiet, but just mention cameras and see the eyes light up. Secretary Bill Tait is expected to come to light with a brand new 1st class ticket very shortly. Better start building the rig Bill—2 mx for a start. Noticed 7FJ casting envious eyes on a photograph of a console rig from the north; now come on Ted, cease fiddling and let's hear the old voice again. 7WG and 7RY still home building; removed those bricks from the shack yet Bill?

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